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lable Thanksgiving Day, Christmas Day,     *
  *      and New Year's Day.                                          *
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  *              W E L C O M E   T O   T H E                          *
  *         U. S.   P A T E N T   T E X T   F I L E                   *
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=> e isner/in

E#      FILE            FREQUENCY  TERM
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E1      USPAT               24     ISNARDI, MICHAEL A/IN
E2      USPAT                2     ISNARDON, GERALD/IN
E3      USPAT                0 --> ISNER/IN
E4      USPAT                1     ISNER, ANDREW B/IN
E5      USPAT                7     ISNER, JEFFREY M/IN
E6      USPAT                3     ISNER, ROBERT E/IN
E7      USPAT                1     ISNER, WILLIAM G/IN
E8      USPAT                1     ISO AHO, KALEVI/IN
E9      USPAT                1     ISO, AKIO/IN
E10     USPAT                1     ISO, BASARIC/IN
E11     USPAT                1     ISO, HARUO/IN
E12     USPAT                1     ISO, KAZUSHIGE/IN

=> s e5

L1            7 "ISNER, JEFFREY M"/IN

=> d l1 1-7


1.  5,652,225, Jul. 29, 1997, Methods and products for nucleic acid
delivery; Jeffrey M. Isner, 514/44; 424/93.2; 435/172.1, 172.3,
320.1; 536/23.5, 23.51; 604/51, 52, 53; 935/9, 22, 32, 33, 34, 52, 57
[IMAGE AVAILABLE]

2.  5,368,034, Nov. 29, 1994, Method and apparatus for thrombolytic
therapy; Jeffrey M. Isner, 600/439, 455, 504 [IMAGE AVAILABLE]

3.  5,106,386, Apr. 21, 1992, Catheter; Jeffrey M. Isner, et al.,
606/15 [IMAGE AVAILABLE]

4.  5,104,393, Apr. 14, 1992, Catheter; Jeffrey M. Isner, et al.,
606/15 [IMAGE AVAILABLE]

5.  4,997,431, Mar. 5, 1991, Catheter; Jeffrey M. Isner, et al.,
606/15 [IMAGE AVAILABLE]

6.  4,985,028, Jan. 15, 1991, Catheter; Jeffrey M. Isner, et al.,
606/15 [IMAGE AVAILABLE]

7.  4,862,886, Sep. 5, 1989, Laser angioplasty; Richard H. Clarke, et
al., 606/7; 372/53, 57, 70, 108; 385/33; 606/15, 17 [IMAGE AVAILABLE]

=> d l1 date
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TITLE: Methods and products for nucleic acid delivery
US PAT NO: 5,652,225 [IMAGE AVAILABLE] DATE ISSUED: Jul. 29, 1997
APPL-NO: 08/675,523 DATE FILED: Jul. 3, 1996
REL-US-DATA: Continuation of Ser. No. 318,045, Oct. 4, 1994, abandoned.

=> s endotheli?(P)(progenitor?)

5953 ENDOTHELI?
1427 PROGENITOR?
L2 76 ENDOTHELI?(P)(PROGENITOR?)

=> s l2 and (angiogenesis or ishcemi?)

828 ANGIOGENESIS
2 ISHCEMI?
L3 13 L2 AND (ANGIOGENESIS OR ISHCEMI?)

=> d l3 1-13

1. 5,728,546, Mar. 17, 1998, Fibroblast growth factor 13; John M. Greene, et al., 435/69.1, 320.1, 325; 536/23.51 [IMAGE AVAILABLE]

2. 5,707,624, Jan. 13, 1998, Treatment of Kaposi's sarcoma by inhibition of scatter factor; Brian J. Nickoloff, et al., 424/158.1, 143.1, 145.1, 152.1 [IMAGE AVAILABLE]

3. 5,681,714, Oct. 28, 1997, Nucleic acid encoding tek receptor tyrosine kinase; Martin L. Breitman, deceased, et al., 435/69.1, 194, 252.3, 254.11, 320.1 [IMAGE AVAILABLE]

4. 5,652,133, Jul. 29, 1997, Cloning and expression of the human macrophage inflammatory protein-1.alpha..alpha.) /rantes receptor; Philip M. Murphy, 435/325, 6, 320.1, 357, 365; 530/350, 351; 536/23.1, 23.5, 24.31 [IMAGE AVAILABLE]

5. 5,650,490, Jul. 22, 1997, Tie-2 ligand 2; Samuel Davis, et al., 530/350 [IMAGE AVAILABLE]

6. 5,645,986, Jul. 8, 1997, Therapy and diagnosis of conditions related to telomere length and/or telomerase activity; Michael D. West, et al., 435/6, 91.2, 183, 184, 194; 436/63; 536/24.31, 24.33 [IMAGE AVAILABLE]

7. 5,643,755, Jul. 1, 1997, Nucleic acid encoding tie-2 ligand; Samuel Davis, et al., 435/69.5, 70.1, 252.3, 320.1, 325, 348, 365, 365.1; 536/23.1, 23.5, 24.3, 24.31; 935/22, 69, 70, 72 [IMAGE AVAILABLE]

8. 5,631,237, May 20, 1997, Method for producing in vivo delivery of therapeutic agents via liposomes; Victor J. Dzau, et al., 514/44; 264/4.1, 4.3, 4.6; 424/417, 450; 428/402.2 [IMAGE AVAILABLE]

9. 5,576,206, Nov. 19, 1996, Human papilloma virus genes and their use in gene therapy; Richard Schlegel, 435/371, 320.1 [IMAGE AVAILABLE]

10. 5,470,878, Nov. 28, 1995, Cell signaling inhibitors; John Michnick, et al., 514/558, 258, 262, 274, 299, 315, 418, 425, 529, 552, 561, 613, 617, 626, 629, 669; 544/254, 285, 301; 546/183, 243; 548/486, 556 [IMAGE AVAILABLE]

11. 5,466,596, Nov. 14, 1995, Tissue specific transcriptional regulatory element; Martin L. Breitman, et al., 435/354, 69.1, 70.3; 536/24.1 [IMAGE

AVAILABLE]

12. 5,376,542, Dec. 27, 1994, Method for producing immortalized cell lines using human papilluma virus genes; Richard Schlegal, 435/172.2, 172.3; 935/62, 71, 93 [IMAGE AVAILABLE]

13. 5,332,671, Jul. 26, 1994, Production of vascular endothelial cell growth factor and DNA encoding same; Napoleone Ferrara, et al., 435/360, 69.4, 69.6, 320.1; 536/23.5, 23.51 [IMAGE AVAILABLE]

=> d 13 1-13 kwic

US PAT NO: 5,728,546 [IMAGE AVAILABLE] L3: 1 of 13

SUMMARY:

BSUM(8)

Fibroblast . . . been shown to have biological activity indistinguishable from human placental fibroblast growth factor in mitogenicity, synthesis of plasminogen activator and **angiogenesis** assays (Squires, C. H., et al., J. Biol. Chem., 263:16297-302 (1988)).

SUMMARY:

BSUM(10)

Newly . . . Mol. and Cell. Biol., 13(7):4251-4259 (1993). Further, FGF-9 was found to stimulate the cell growth of oligodendrocyte type 2 astrocyte **progenitor** cells, BALB/c3T3, and PC-12 cells but not that of human umbilical vein **endothelial** cells (Naruo, K., et al., J. Biol. Chem., 268:2857-2864 (1993).

DETDESC:

DETD(50)

The . . . to various disease conditions such as thrombosis, arteriosclerosis, and other cardiovascular conditions. These polypeptide may also be employed to stimulate **angiogenesis** and limb regeneration.

DETDESC:

DETD(66)

Antagonist . . . cell growth and proliferation effects of the polypeptides of the present invention on neoplastic cells and tissues, i.e. stimulation of **angiogenesis** of tumors, and, therefore, retard or prevent abnormal cellular growth and proliferation, for example, in tumor formation or growth.

US PAT NO: 5,707,624 [IMAGE AVAILABLE] L3: 2 of 13

SUMMARY:

BSUM(7)

A . . . of KS. KS is characterized both by tumor cell growth and neovascularization. KS lesions contain multiple cellular constituents, including proliferating **endothelial** cells, an expanded population of dermal dendrocytes that express factor XIIIa (a transglutaminase), lymphocytes, and a population of spindle-shaped tumor. . . between these cellular constituents has not been clearly delineated. It has been hypothesized that KS tumor cells are derived from **endothelial** cells

(Dorfman, R. F., Hum. Pathol. 15:1013-1017 (1984)), dermal dendrocytes (Nickoloff, B. J. et al., Am. J. Pathol. 135:793-800 (1989)), and smooth muscle cells (Weich, H. A., et al., Am. J. Pathol. 139-1251-1258 (1991)). **Endothelium**, dendrocytes, and KS tumor cells in vivo share a number of immunophenotypic features, including expression of CD34 (human **progenitor** cell antigen), vascular cell adhesion molecule-1 (VCAM-1), and CD31 (platelet **endothelial** cell adhesion molecule-1) (Nickoloff, B. J., Arch. Dermatol. 127:523-529 (1991) and Nickoloff, B. J., Arch Dermatol. 129:250-251 (1993)).

DETDESC:

DETD(6)

It . . . important role in the pathogenesis of the disease. It should also be recognized, therefore, that in HIV-induced diseases characterized by **angiogenesis** and where SF is a contributing factor to the **angiogenesis**, the present methods of the invention may also be applied.

DETDESC:

DETD(21)

Rat Cornea **Angiogenesis** Assay. Neovascularization was assayed in the avascular cornea of the rat eye, as described by Polverini et al. (Polverini, P.. . . for 7 days. Responses were scored after carbon perfusion as positive only when sustained ingrowth of new vessels was present. **Angiogenesis** inhibition studies were performed using both chicken and rabbit antibodies against SF.

DETDESC:

DETD(39)

Endothelial . . . and relevant positive/negative control cytokines was investigated and the results are summarized below in Table 1, which show inhibition of **angiogenesis** induced by KSGM using anti-SF antibodies. The rat corneal neovascularization assay was used to assess the pro-angiogenic properties of KSGM. . . Both positive and negative controls were performed, and both chicken and rabbit anti-SF antibodies could effectively reduce the majority of **angiogenesis** induced by KSGM.

DETDESC:

DETD(41)

Compared to known angiogenic cytokines such as bFGF and HGF, KSGM HTLV-II CM was highly angiogenic in the rat cornea **angiogenesis** assay (Polverini, P. J. et al., Lab. Invest. 51:635-642 (1984)), with 4 out of 4 strongly positive corneal neovascular responses.. . . C.), and reduced by 60% using the chicken antibody to SF. Both anti-SF antibodies could neutralize recombinant human HGF induced **angiogenesis**, and did not cross-react with bFGF. These findings are consistent with a previous study demonstrating that SF is a potent. . .

DETDESC:

DETD(45)

Large . . . in great part, to SF. The present invention further demonstrates that HTLV-II CM is highly angiogenic in the rat cornea **angiogenesis** assay and that SF is responsible for most of the angiogenic activity.

DETDESC:

DETD(71)

In Vivo and In Vitro Bioassays of **Angiogenesis**

US PAT NO: 5,681,714 [IMAGE AVAILABLE] L3: 3 of 13

SUMMARY:

BSUM(6)

Angiogenesis in both the embryo and adult requires the differentiation, proliferation, and migration of endothelial cells. Tissue transplantation studies with quail/chick. . .

SUMMARY:

BSUM(10)

In . . . present inventors have also shown by in situ hybridization that tek is expressed in the endocardium as well as the **endothelial** lining of the vasculature. tek was also found to be expressed in both mature **endothelial** cells and their **progenitors**, suggesting that the signalling pathways regulated by tek may be important to both the determination and proliferation of cells of the **endothelial** lineage. The tek locus of humans was mapped to the human chromosome 9p21 region. This region is deleted or rearranged. . .

SUMMARY:

BSUM(26)

The . . . the novel receptor tyrosine kinase of the invention in tissues and cells. The antibodies may therefore be used to monitor **angiogenesis**, cardiogenesis and tumorigenesis.

SUMMARY:

BSUM(33)

The . . . the present invention. The methods of the invention will also be useful for identifying substances which may affect cardiogenesis and **angiogenesis** and/or maintenance of cells of the endothelial lineage and which may play a role in tumorigenesis.

SUMMARY:

BSUM(34)

Substances which affect **angiogenesis**, cardiogenesis or tumorigenesis may be identified using the methods of the invention by comparing the pattern and level of expression. . .

DRAWING DESC:

DRWD(96)

Specifically, . . . well as sectioned and whole mount embryos, showed that tek is specifically expressed in the endocardium, the leptomeninges and the **endothelial** lining of the vasculature from the earliest stages of their development. Moreover, examination of the morphology of tek-expressing cells, and staging of tek expression relative to that of the **endothelial** cell marker von Willebrand factor, revealed that tek

is expressed prior to von Willebrand factor and appears to mark the embryonic **progenitors** of mature **endothelial** cells. Thus, tek encodes a novel putative receptor tyrosine kinase that may be critically involved in the determination and/or maintenance of cells of the **endothelial** lineage.

DRAWING DESC:

DRWD(100)

The present inventors' work suggested that tek is expressed in the presumptive precursors of **endothelial** cells, the angioblasts. First, tek expression was detected in both von Willebrand factor-positive cells as well as cells that appear to be **progenitors** of **endothelial** cells. Second, tek expression was observed in cells of non-**endothelial** morphology that in the avian system have been identified previously as angioblasts. It may also be significant that in the. . . (1989), Mol. Cell. Med., 6, 263-274 who showed in mouse tissue transplantation studies that lacZ-expressing somite tissue, while devoid of **endothelial** cells prior to transplantation, possess cells capable of migrating and contributing to the host vasculature. Taken together, the present inventors' work suggests that tek expression may constitute one of the earliest mammalian **endothelial** cell lineage markers described to date.

DRAWING DESC:

DRWD(102)

Tek expression is very low in adults. However, it is likely that expression will be upregulated upon induction of **angiogenesis**. Accordingly, tek likely plays a role in **angiogenesis**, for example in tumor growth, in mature animals in addition to its role during development.

DRAWING DESC:

DRWD(125)

Within . . . of Tek protein. Such antibodies will be useful in the diagnosis and treatment of developmental disorders of endothelial cell growth, **angiogenesis**, vascularization, wound healing and tumorigenesis.

DRAWING DESC:

DRWD(137)

As . . . expression patterns found for the novel tyrosine kinase of the invention indicate that it plays unique and important roles in **angiogenesis**, cardiogenesis and tumorigenesis. Therefore, the above described methods for detecting nucleic acid molecules and fragments thereof and Tek protein and parts thereof, can be used to monitor **angiogenesis**, cardiogenesis and tumorigenesis by detecting and localizing the novel tyrosine kinase protein of the invention.

DRAWING DESC:

DRWD(138)

It . . . to study the developmental expression of Tek and, accordingly, will provide further insight into the role of Tek protein in **angiogenesis**, cardiogenesis and tumorigenesis.

DRAWING DESC:

DRWD(139)

The . . . is only expressed in cells of the endothelial lineage permits the identification of substances such as ligands, which may affect **angiogenesis** and/or maintenance of cells of the endothelial lineage and which may play a role in tumorigenesis. Therefore, in accordance with. . .

DRAWING DESC:

DRWD(151)

The . . . form a ligand/receptor complex and activating tyrosine kinase activity thereby affecting signalling pathways, particularly those involved in the regulation of **angiogenesis.**

DRAWING DESC:

DRWD(156)

The . . . protein of the present invention. The methods of the invention are therefore useful for identifying potential stimulators or inhibitors of **angiogenesis**, cardiogenesis or tumorigenesis.

DRAWING DESC:

DRWD(161)

The invention further provides a method for assaying for a substance that affects **angiogenesis**, cardiogenesis, or tumorigenesis comprising administering to a non-human animal or to a tissue of an animal, a substance suspected of affecting **angiogenesis**, cardiogenesis, or tumorigenesis and detecting, and optionally quantitating, the novel receptor tyrosine kinase of the invention in the non-human animal. . .

DRAWING DESC:

DRWD(163)

Substances . . . banding of ligands and Tek protein, identified by the methods of the invention, may be used for stimulating or inhibiting **angiogenesis** or cardiogenesis, or inhibiting tumorigenesis. The efficacy of these substances in the treatment of human conditions may be confirmed using. . .

DETDESC:

DETD(50)
Expression of tek in **endothelial** cell **progenitors**

DETDESC:

DETD(51)

The . . . and 8.5 in focal regions thought to represent developing blood vessels raised the possibility that tek might be expressed in **endothelial** cell **progenitors**. Indeed, close inspection of hybridized sections from 8 to 8.5 day embryos revealed that while the expression the tek in the maternal decidua is restricted to cells of an **endothelial** cell morphology, tek expressing cells in the embryo are of two morphologically distinct cell types. In the developing blood islands. . . of the yolk sac, where tek expression is first detected, silver grains are localized predominantly to elongated cells with characteristic **endothelial** cell morphology (FIG. 6C). In contrast,

within the cephalic mesenchyme, silver grains are frequently observed over large, round cells that,. . . during arian embryogenesis (Pardanaud et al., 1987; Coffin & Poole, 1988; Noden, 1989; Noden, 1991), correspond to angioblasts, the presumptive **progenitor** of **endothelial** cells (FIG. 6F). Both cell types are observed in the developing endocardium (FIG. 6I) which, at later stages, is known to contain only fully mature **endothelial** cells.

DETDESC:

DETD(54)

FIG. . . . factor, these observations, together with those on the morphology of tek-expressing cells, suggest that tek is expressed in both mature **endothelial** cells and their **progenitors**.

US PAT NO: 5,652,133 [IMAGE AVAILABLE] L3: 4 of 13

SUMMARY:

BSUM(4)

The . . . and phagocytes of the mammalian immune system, but in addition, some are able to regulate the proliferative potential of hematopoietic **progenitor** cells, **endothelial** cells, and certain types of transformed cells (for reviews see Wolpe and Cerami, FASEB J. 3, 2565-2573 (1989); Oppenheim et. . .

SUMMARY:

BSUM(5)

A . . . of this group are potent chemoattractants for neutrophils in vivo and in vitro; IL-8 and platelet factor 4 also regulate **angiogenesis**. (Koch et al., Science 258, 1798-1801 (1992); Maione et al., Science 247, 77-79 (1990)). Two human chemokine .alpha. receptors, designated. . .

US PAT NO: 5,650,490 [IMAGE AVAILABLE] L3: 5 of 13

SUMMARY:

BSUM(2)

The . . . the diagnosis and treatment of certain diseases involving endothelial cells and associated TIE receptors, such as neoplastic diseases involving tumor **angiogenesis**, wound healing, thromboembolic diseases, atherosclerosis and inflammatory diseases. More generally, the TIE-2 ligand may be used to promote the growth,. . .

SUMMARY:

BSUM(5)

The . . . particular interest due to the possible involvement of growth factors in several important physiological and pathological processes, such as vasculogenesis, **angiogenesis**, atherosclerosis, and inflammatory diseases. (Folkman, et al. Science, 235: 442-447 (1987)). Also, the receptors of several hematopoietic growth factors are. . .

SUMMARY:

BSUM(10)

It . . . in skin wounds. Korhonen, et al. Blood 80: 2548-2555 (1992).

Thus tie has been suggested to play a role in **angiogenesis**, which is important for developing treatments for solid tumors and several other **angiogenesis**-dependent diseases such as diabetic retinopathy, psoriasis, atherosclerosis and arthritis.

SUMMARY:

BSUM(11)

Two . . . homolog of the murine tek gene, which, like tie, has been reported to be expressed in the mouse exclusively in **endothelial** cells and their presumptive **progenitors**. Dumont, et al. Oncogene 8: 1293-1301 (1993).

DETDESC:

DETD(22)

Further, . . . or antagonists of the TIE-2 receptor. Such assay systems would be useful in identifying compounds capable of promoting or inhibiting **angiogenesis**. For example, in one embodiment, antagonists of the TIE-2 receptor may be identified as test compounds that are capable of. . .

DETDESC:

DETD(64)

Early . . . embryos develop atop the yolk from a small disk of cells that is covered by the chorioallantoic membrane (CAM). The **endothelial** cells that will come to line the vasculature in the embryo arise from both extra- and intra-embryonic cell sources. Extraembryonically-derived **endothelial** cells, which provide the major source for **endothelial** cells in the embryo, originate from accretions of mesenchyme that are situated laterally around the embryo-proper, just underneath the CAM. As these mesenchyme cells mature, they give rise to a common **progenitor** of both the **endothelial** and hematopoietic cell lineages, termed the hemangioblast. In turn, the hemangioblast gives rise to a mixed population of angioblasts (the **endothelial** cell **progenitor**) and hematoblasts (the pluripotential hematopoietic precursor). Formation of rudiments of the circulatory system begins when **endothelial** cell progeny segregate to form a one-cell-thick vesicle that surrounds the primitive blood cells. Proliferation and migration of these cellular. . .

US PAT NO: 5,645,986 [IMAGE AVAILABLE] L3: 6 of 13

SUMMARY:

BSUM(63)

Such . . . limited to conditions associated with cellular senescence, e.g., (a) cells with replicative capacity in the central nervous system, including astrocytes, **endothelial** cells, and fibroblasts which play a role in such age-related diseases as Alzheimer's disease, Parkinson's disease, Huntington's disease, and stroke,. . . capacity in the immune system such as B and T lymphocytes, monocytes, neutrophils, eosinophils, basophils, NK cells and their respective **progenitors**, which may play a role in age-related immune system impairment, (f) cells with a finite replicative capacity in the vascular system including **endothelial** cells, smooth muscle cells, and adventitial fibroblasts which may play a role in age-related diseases of the vascular system including. . . thrombosis, and aneurysms, and (g) cells with a finite replicative capacity in the eye such as pigmented epithelium and vascular **endothelial** cells which may play an important role in age-related

macular degeneration.

DETDESC:

DETD(29)

The . . . degenerative changes occur in association with the RPE layer. The healthy retina is avascular. The RPE secretes factors that inhibit **angiogenesis**. The RPE also secretes factors that effect the differentiative function of the retinal neurons. RPE cells can be taken from. . .

US PAT NO: 5,643,755 [IMAGE AVAILABLE] L3: 7 of 13

SUMMARY:

BSUM(3)

The . . . the diagnosis and treatment of certain diseases involving endothelial cells and associated TIE receptors, such as neoplastic diseases involving tumor **angiogenesis**, wound healing, thromboembolic diseases, atherosclerosis and inflammatory diseases. More generally, the TIE-2 ligand may be used to promote the growth,. . .

SUMMARY:

BSUM(6)

The . . . particular interest due to the possible involvement of growth factors in several important physiological and pathological processes, such as vasculogenesis, **angiogenesis**, atherosclerosis, and inflammatory diseases. (Folkman, et al. Science, 235: 442-447 (1987)). Also, the receptors of several hematopoietic growth factors are. . .

SUMMARY:

BSUM(11)

It . . . in skin wounds. Korhonen, et al. Blood 80: 2548-2555 (1992). Thus tie has been suggested to play a role in **angiogenesis**, which is important for developing treatments for solid tumors and several other **angiogenesis**-dependent diseases such as diabetic retinopathy, psoriasis, atherosclerosis and arthritis.

DETDESC:

DETD(47)

Early . . . embryos develop atop the yolk from a small disk of cells that is covered by the chorioallantoic membrane (CAM). The **endothelial** cells that will come to line the vasculature in the embryo arise from both extra- and intra-embryonic cell sources. Extraembryonically-derived **endothelial** cells, which provide the major source for **endothelial** cells in the embryo, originate from accretions of mesenchyme that are situated laterally around the embryo-proper, just underneath the CAM. As these mesenchyme cells mature, they give rise to a common **progenitor** of both the **endothelial** and hematopoietic cell lineages, termed the hemangioblast. In turn, the hemangioblast gives rise to a mixed population of angioblasts (the **endothelial** cell **progenitor**) and hematoblasts (the pluripotential hematopoietic precursor). Formation of rudiments of the circulatory system begins when **endothelial** cell progeny segregate to form a one-cell-thick vesicle that surrounds the primitive blood cells. Proliferation and migration of these cellular. . .

US PAT NO: 5,631,237 [IMAGE AVAILABLE] L3: 8 of 13

SUMMARY:

BSUM(6)

One . . . There are also several systemic-physiological problems that can lead to degradation of the cardiovascular system, among these are atherosclerosis, hypertension, **angiogenesis**, myocardial hypertrophy, and vascular smooth muscle cell (VSMC) hypertrophy. For example, in the case of chronic hypertension, it is thought. . .

SUMMARY:

BSUM(7)

Research . . . and the production of abundant extracellular matrix. In similar fashion, restenosis after angioplasty, vein bypass graft stenosis, prosthetic graft stenosis, **angiogenesis** and hypertension all involve abnormalities in vascular cell growth, migration and matrix composition. The precise mechanisms responsible for alterations in. . .

DETDESC:

DETD(11)

The . . . solid tissue, mobile cells, particularly hematopoietic cells, normal cells, abnormal cells, e.g. neoplastic cells, psoriatic cells, neoproliferative cells, mature cells, **progenitor** cells, stem cells, **endothelial** cells, epithelial cells, stromal cells, neuronal cells, mucosal cells, cutaneous cells, vascular smooth muscle cells, hepatic cells, Kuppfer cells, etc., with the exclusion of cells of the reticular **endothelial** system, particularly macrophages or other cells which are naturally phagocytic. Organs which may be involved include the vasculature, heart, pancreas,. . .

DETDESC:

DETD(26)

Those . . . hypertension, restenosis after angioplasty, stenosis, hyperplasia after grafting, hyperplasia after insertion of a stent, trauma associated with bypass surgery, atherosclerosis, **angiogenesis**, myocardial hypertrophy, vascular smooth muscle cell hypertrophy, strokes and aneurysms.

US PAT NO: 5,576,206 [IMAGE AVAILABLE] L3: 9 of 13

DETDESC:

DETD(23)

In addition to epithelial cells, non-epithelial cells such as **endothelial** cells, fibroblasts, muscle cells, bone cells, cartilage cells and brain tissue cells (neurons, glial cells, etc.) can also be immortalized using the method of the present invention. Further, hematopoietic cells such as red blood cell **progenitor** cells, white blood cell **progenitor** cells and megakariocytes can all be immortalized. These immortalized hematopoietic cells can be reintroduced into a host mammal during gene. . .

DETDESC:

DETD(37)

For . . . histocompatibility (HLA) antigens to initiate an immune rejection of the tumor, or alternatively secrete agents which would interfere with further **angiogenesis**, such as growth factor receptor-blocking peptides.

US PAT NO: 5,470,878 [IMAGE AVAILABLE] L3: 10 of 13

SUMMARY:

BSUM(22)

A disease state or treatment-induced toxicity are selected from the group consisting of: tumor progression involving tumor stimulation of blood supply (**angiogenesis**) by production of fibroblst growth factor (FGF), vascular endothelial growth factor (VEGF) or platelet-derived growth factor (PDGF); tumor invasion and. . .

DETDESC:

DETD(45)

The . . . of stimulating said proliferation and said amount is sufficient to inhibit said proliferation; (6) lower systemic vascular resistance conferred by **endothelial** cells and said amount is sufficient to reduce the release of hypertension-inducing substances; (7) lower systemic vascular resistance induced by **endothelial** cells and said amount is sufficient to enhance the release of anti-hypertensive substances; (8) lower expression of adhesion molecules induced. . . TNF, or endotoxin treated megakaryocytes, fibroblastic cells, and macrophages; (14) prevent the down-regulation of receptors for cytokines in TNF-treated hematopoietic **progenitor** cells and said amount is sufficient to prevent said down-regulation; (15) suppress the production of metalloproteases in IL-1-stimulated or TNF-stimulated. . .

DETDESC:

DETD(46)

The . . . (epidermal growth factor), TGFB (transforming growth factor) and PDGF (platelet derived growth factor) effects in vivo, such as inhibition of **angiogenesis** or restenosis. For example, Ferns et al. (Science (1991) 253:1129) have shown that neointimal smooth muscle chemotaxis and angioplasty are. . .

DETDESC:

DETD(85)

The . . . smooth muscle cells in response to growth factors capable of stimulating said proliferation (6) lower systemic vascular resistance conferred by **endothelial** cells, (7) lower systemic vascular resistance induced by **endothelial** cells, (8) lower expression of adhesion molecules induced by enhancers thereof, (9) suppress the activation of T-cells and macrophages by. . . TNF, or endotoxin treated megakaryocytes, fibroblastic cells, and macrophages; (14) prevent the down-regulation of receptors for cytokines in TNF-treated hematopoietic **progenitor** cells, (15) suppress the production of metalloproteases in IL-1-stimulated or TNF-stimulated glomerular epithelial cells or synovial cells, (16) enhance the. . .

DETDESC:

DETD(207)

In . . . proliferation. Disregulated PDGF-proliferative response has

been linked to a variety of diseases, including, e.g., restenosis, atherosclerosis, fibrosis, and tumor cell **angiogenesis**. Cells were plated in low serum-containing medium for 24 hours prior to stimulation with various concentrations of inventive compound no.. . .

DETDESC:

DETD(215)

Another . . . occlusion in atherogenesis and restenosis and plays a role in autocrine and paracrine stimulation of tumor cells and tumor cell-induced **angiogenesis**. In this assay, cells were grown in reduced serum (0.5% fetal calf serum) for 24 hours prior to stimulating with. . .

DETDESC:

DETD(219)

This . . . hours prior to stimulating with various concentrations of VEGF. VEGF has been shown to be important in tumor cell- mediated **angiogenesis**. Compound no. 58, at 5 .mu.M, inhibited VEGF-induced proliferation at all concentrations of VEGF tested, as shown in FIG. 22.

DETDESC:

DETD(231)

This . . . proliferation. Disregulated PDGF-proliferative response has been linked to a variety of diseases, including, e.g., restenosis, atherosclerosis, fibrosis, and tumor cell **angiogenesis**. Cells were plated in low serum-containing medium for 24 hours prior to stimulation with various concentrations of inventive compounds nos.. . .

US PAT NO: 5,466,596 [IMAGE AVAILABLE] L3: 11 of 13

SUMMARY:

BSUM(7)

The present inventors have identified a transcriptional regulatory element characterized by **endothelial** specific expression. The element is expressed in cells of the **endothelial** lineage including mature and **progenitor** cells. This is the first report of a transcriptional regulatory element which is capable of directing expression specifically in cells of the **endothelial** lineage.

DETDESC:

DETD(3)

In the adult and all stages of embryonic development examined, tek expression was found to be restricted to cells of the **endothelial** lineage. Specifically, in situ hybridization analysis of adult tissues, as well as sectioned and whole mount embryos, showed that tek is specifically expressed in the endocardium, the leptomeninges and the **endothelial** lining of the vasculature from the earliest stages of their development. Moreover, examination of the morphology of tek-expressing cells, and staging of tek expression relative to that of the **endothelial** cell marker von Willebrand factor, revealed that tek is expressed prior to von Willebrand factor and appears to mark the embryonic **progenitors** of mature **endothelial** cells.

DETDESC:

DETD(4)

The . . . identified a transcriptional regulatory element located upstream of tek which specifically directs expression of a gene in cells of the **endothelial** lineage. The transcriptional regulatory element has been found to direct expression in both mature and **progenitor endothelial** cells.

DETDESC:

DETD(10)

The . . . a reporter gene or a gene encoding a substance which has toxic or therapeutic activity including a factor which modulates **angiogenesis**. Examples of reporter genes, factors which modulate **angiogenesis**, and substances with toxic or therapeutic activity are discussed below.

DETDESC:

DETD(23)

The . . . of the endothelial lineage. In particular, the invention provides a mechanism for investigating vascularization of tumors and the control of **angiogenesis**. A transgenic mammal may be produced which expresses a substance exclusively in cells of the endothelial lineage. A comparison of. . .

DETDESC:

DETD(24)

Substance . . . neovascularization in vivo including factors which are associated with the vascularization that permits tumor growth; substances which are inhibitors of **angiogenesis** such as transforming growth factor .beta., tumor necrosis factor .alpha., human platelet factor 4 (PF4) and .alpha. interferon; substances which. . . other proteins such as protamine which has demonstrated angiostatic properties. For a review of factors which play a role in **angiogenesis** see Maione T. E. and R. J. Sharpe, TIPS, November 1990 Vol. 11 page 457.

DETDESC:

DETD(77)

Expression of Tek in **Endothelial** Cell **Progenitors**

DETDESC:

DETD(78)

The . . . and 8.5 in focal regions thought to represent developing blood vessels raised the possibility that tek might be expressed in **endothelial** cell **progenitors**. Indeed, close inspection of hybridized sections from 8 to 8.5 day embryos revealed that while the expression of tek in the maternal decidua is restricted to cells of an **endothelial** cell morphology, tek expressing cells in the embryo are of two morphologically distinct cell types. In the developing blood islands. . . of the yolk sac, where tek expression is first detected, silver grains are localized predominantly to elongated cells with characteristic **endothelial** cell morphology (FIG. 7C). In contrast, within the cephalic mesenchyme, silver grains are frequently observed over large, round cells that,. . . during avian embryogenesis (Pardanaud et al., 1987; Coffin & Poole, 1988; Noden, 1989; Noden, 1991), correspond to angioblasts, the presumptive **progenitor** of

endothelial cells (FIG. 7F). Both cell types are observed in the developing endocardium (FIG. 7I) which, at later stages, is known to contain only fully mature **endothelial** cells.

DETDESC:

DETD(81)

FIG. . . . factor, these observations, together with those on the morphology of tek-expressing cells, suggest that tek is expressed in both mature **endothelial** cells and their **progenitors**.

US PAT NO: 5,376,542 [IMAGE AVAILABLE] L3: 12 of 13

DETDESC:

DETD(23)

In addition to epithelial cells, non-epithelial cells such as **endothelial** cells, fibroblasts, muscle cells, bone cells, cartilage cells and brain tissue cells (neurons, glial cells, etc.) can also be immortalized using the method of the present invention. Further, hematopoietic cells such as red blood cell **progenitor** cells, white blood cell **progenitor** cells and megakariocytes can all be immortalized. These immortalized hematopoietic cells can be reintroduced into a host mammal during gene. . .

DETDESC:

DETD(37)

For . . . histocompatibility (HLA) antigens to initiate an immune rejection of the tumor, or alternatively secrete agents which would interfere with further **angiogenesis**, such as growth factor receptor-blocking peptides.

US PAT NO: 5,332,671 [IMAGE AVAILABLE] L3: 13 of 13

DETDESC:

DETD(186)

It . . . is expressed in organs other than the pituitary gland. However, considering the fundamental role of vascular endothelial cell growth and **angiogenesis** in a great variety of normal and pathological proliferations, the distribution of VEGF is likely to be more widespread.

DETDESC:

DETD(188)

These homologies suggest a common origin from an ancestral **progenitor** gene for the sis protooncogene and the gene encoding bovine VEGF. While PDGF is active on a wide variety of cell types of mesenchymal origin and inactive on **endothelial** cells, VEGF appears to be a highly specialized molecule selective for vascular **endothelial** cells. This suggests that the structural divergence between the product of sis protooncogene and VEGF was accompanied by a marked. . .

DETDESC:

DETD(189)

The . . . cell death or lysis. Thus, VEGF may potentially play a role as a soluble mediator of endothelial cell growth and **angiogenesis**.

VEGF was found by Northern, blotting to be encoded in follicular cells by a single 3.7 kb messenger RNA.

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ENTER PASSWORD:
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 ********
Welcome to DIALOG

Dialog level 98.03.12D

Last logoff:  19mar98 13:17:08
Logon file001 19mar98 14:12:07
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            $0.03    0.001 Hrs File1
     $0.03  Estimated cost File1
     $0.03  Estimated cost this search
     $0.03  Estimated total session cost   0.001 Hrs.

File 410:Chronolog(R)  1981-1998/Mar
       (c) 1998 The Dialog Corporation plc

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HILIGHT set on as ''
HILIGHT set on as ''
? begin 55,72,154,399,351

       19mar98 14:12:26 User208760 Session D994.2
            $0.00    0.003 Hrs File410
     $0.00  Estimated cost File410
     $0.00  Estimated cost this search
     $0.03  Estimated total session cost   0.005 Hrs.

SYSTEM:OS  - DIALOG OneSearch
  File  55:BIOSIS PREVIEWS(R)  1985-1998/Mar W2
        (c) 1998 BIOSIS
  File  72:EMBASE  1985-1998/Mar W3
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  File 154:MEDLINE(R)  1985-1998/May W2
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*File 154: 1998 MEDLINE reload available.
           ******Accession numbers have changed*****
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   File 351:DERWENT WPI  1963-1998/UD=9811;UP=9808;UM=9806
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       Set  Items  Description
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 ? e au=isner


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 E1        1  AU=ISNENGHI, E.
 E2        2  AU=ISNENGHI, EDOARDO
 E3        0 *AU=ISNER
 E4        1  AU=ISNER A
 E5        1  AU=ISNER A B
 E6       10  AU=ISNER A F
 E7       13  AU=ISNER A.F.
 E8       13  AU=ISNER AF
 E9        1  AU=ISNER D
 E10      40  AU=ISNER J
 E11       1  AU=ISNER J D
 E12       1  AU=ISNER J J

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 Ref   Items  Index-term
 E13     449  AU=ISNER J M
 E14       4  AU=ISNER J.
 E15     227  AU=ISNER J.M.
 E16     210  AU=ISNER JM
 E17       1  AU=ISNER L
 E18       1  AU=ISNER M-E
 E19       1  AU=ISNER ME
 E20       1  AU=ISNER P D
 E21       1  AU=ISNER P.D.
 E22       1  AU=ISNER PD
 E23       3  AU=ISNER R E
 E24       9  AU=ISNER R J

           Enter P or PAGE for more
 ? s e9-e16

                1  AU=ISNER D
               40  AU=ISNER J
                1  AU=ISNER J D
                1  AU=ISNER J J
              449  AU=ISNER J M
                4  AU=ISNER J.
              227  AU=ISNER J.M.
              210  AU=ISNER JM
       S1     933  E9-E16
 ? s s1 and endotheli? and progenitor?

              933  S1
           246472  ENDOTHELI?
            46655  PROGENITOR?
       S2       4  S1 AND ENDOTHELI? AND PROGENITOR?
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>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
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S3 2 RD S2 (unique items)
? t s3/3/all

3/3/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
(c) 1998 BIOSIS. All rts. reserv.

14019194 BIOSIS Number: 01019194
Circulating **endothelial progenitor** cells in peripheral blood incorporate into re-**endothelialization** after vascular injury
Asahara T; Krasinski K L; Chen D; Sullivan A B; Kearney M; Silver M; Li T ; **Isner J M**
St. Elizabeth's Med. Center, Boston, MA, USA
Circulation 96 (8 SUPPL.). 1997. I725.
Full Journal Title: 70th Scientific Sessions of the American Heart Association, Orlando, Florida, USA, November 9-12, 1997. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 050 Iss. 001 Ref. 006975

3/3/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
(c) 1998 BIOSIS. All rts. reserv.

13451523 BIOSIS Number: 99451523
Isolation of putative **progenitor endothelial** cells for angiogenesis
Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; **Isner J M**
Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston, MA 02135, USA
Science (Washington D C) 275 (5302). 1997. 964-967.
Full Journal Title: Science (Washington D C)
ISSN: 0036-8075
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192
? s endothelia? and progenitor? and (angiogenesis or ischemi?)

160976 ENDOTHELIA?
46655 PROGENITOR?
19304 ANGIOGENESIS
265961 ISCHEMI?
S4 67 ENDOTHELIA? AND PROGENITOR? AND (ANGIOGENESIS OR ISCHEMI?)
? s s4 and (transplant? or neovascular?)

67 S4
425934 TRANSPLANT?
17545 NEOVASCULAR?
S5 21 S4 AND (TRANSPLANT? OR NEOVASCULAR?)
? rd s5

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
...completed examining records
S6 15 RD S5 (unique items)
? t s6/7/all

6/7/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

14017485 BIOSIS Number: 01017485
Vasculogenesis, developed by **endothelial progenitor** cells, has significant role in **neovascularization** in severe **ischemia**
Asahara T; Takahashi T; Silver M; Li T; Yang J
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 96 (8 SUPPL.). 1997. I415-I416.
Full Journal Title: 70th Scientific Sessions of the American Heart Association, Orlando, Florida, USA, November 9-12, 1997. Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 050 Iss. 001 Ref. 005266

6/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11802916 BIOSIS Number: 98402916
Failure of blood-island formation and vasculogenesis in Flk-1-deficient mice
Shalaby F; Rossant J; Yamaguchi T P; Gertsenstein M; Wu X-F; Breitman M L ; Schuh A C
Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., 600 University Avenue, Toronto, ON M5G 1X5, Canada
Nature (London) 376 (6535). 1995. 62-66.
Full Journal Title: Nature (London)
ISSN: 0028-0836
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 006 Ref. 080508
The receptor tyrosine kinase Flk-1 (ref. 1) is believed to play a pivotal role in **endothelial** development. Expression of the Flk-1 receptor is restricted to **endothelial** cells and their embryonic precursors, and is complementary to that of its ligand, vascular **endothelial** growth factor (VEGF), which is an **endothelial**-specific mitogen. Highest levels of flk-1 expression are observed during embryonic vasculogenesis and **angiogenesis**, and during pathological processes associated with **neovascularization**, such as tumour **angiogenesis**. Because flk-1 expression can be detected in presumptive mesodermal yolk-sac blood-island **progenitors** as early as 7.0 days postcoitum, Flk-1 may mark the putative common embryonic **endothelial** and haematopoietic precursor, the haemangioblast, and thus may also be involved in early haematopoiesis. Here we report the generation of mice deficient in Flk-1 by disruption of the gene using homologous recombination in embryonic stem (ES) cells. Embryos homozygous for this mutation die in utero between 8.5 and 9.5 days post-coitum, as a result of an early defect in the development of haematopoietic and **endothelial** cells. Yolk-sac blood islands were absent at 7.5 days, organized blood vessels could not be observed in the embryo or yolk sac at any stage, and haematopoietic **progenitors** were severely reduced. These results indicate that Flk-1 is essential for yolk-sac blood-island formation and vasculogenesis in the mouse embryo.

6/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11488800 BIOSIS Number: 98088800
Transformation of fibroblasts into **endothelial** cells during **angiogenesis**

Kon K; Fujiwara T
Lab. Animal Center, Sch. Med., Ehime Univ., Shigenobu, Ehime 791-02, Japan
Cell & Tissue Research 278 (3). 1994. 625-628.
Full Journal Title: Cell & Tissue Research
ISSN: 0302-766X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 005 Ref. 059210
Light- and electron-microscopic autoradiography have been used to study fibroblast transformation into **endothelial** cells in the formation of new blood vessels during wound healing in rabbit ear chambers. When cultured fibroblasts labeled with tritium thymidine were **transplanted** autologously into the chambers, newly formed blood vessels contained **endothelial** cells labeled with tritium thymidine. This result suggests that fibroblasts play a pivotal role in **angiogenesis**, as **progenitors** of **endothelial** cells in newly formed blood vessels.

6/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7697059 BIOSIS Number: 90065059
LEUKOCYTE ANTIGEN CD34 IS EXPRESSED BY A SUBSET OF CULTURED **ENDOTHELIAL** CELLS AND ON **ENDOTHELIAL** ABLUMINAL MICROPROCESSES IN THE TUMOR STROMA
SCHLINGEMANN R O; RIETVELD F J R; DE WAAL R M W; BRADLEY N J; SKENE A I; DAVIES A J S; GREAVES M F; DENEKAMP J; RUITER D J
DEP. PATHOL., UNIV. HOSP. NIJMEGEN, P.O. BOX 9101, 6500 HB NIJMEGEN, NETH.
LAB INVEST 62 (6). 1990. 690-696. CODEN: LAINA
Full Journal Title: Laboratory Investigation
Language: ENGLISH
It has been reported that the human haemopoietic **progenitor** cell antigen CD34 is also expressed by vascular structures. To investigate its precise vascular localization, we have studied the cellular and subcellular distribution of CD34 in normal tissues and pathologic tissues with **neovascularization** . In normal resting tissues, anti-CD34 antibodies, ICH3 and QBEND-10 predominantly stain the luminal **endothelial** membrane, whereas the abluminal membrane is negative or weakly positive. In contrast, a striking staining of **endothelial** abluminal microprocesses (EAM) was found in the tumor stroma. These structures, measuring up to 20 .mu.m in length, could be observed in thick vibratome sections both at the tips of vascular sprouts and, also frequently, on fully formed microvessels. The number of vascular sprouts and EAM varied widely between different tumors. CD34-stained EAM were sparsely present in fetal tissue of 10 weeks gestation, but they could not be demonstrated in granulation tissue of wound healing. By immunoelectron microscopy, the EAM were continuous with the cytoplasm of **endothelial** cells showing an immature phenotype as seen in regeneration. In cultured human umbilical vein endothelium, CD34 was preferentially found on a small subset of cells with the morphologic appearance of migrating cells. These findings suggest that CD34 is an **endothelial** marker for EAM present during **angiogenesis**.

6/7/5 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

8821673 EMBASE No: 93125395
Embryology of the vascular system
L'EMBRYOLOGIE DES VAISSEAUX
Dieterlen-Lievre F.; Pardanaud L.
Inst. d'Embryol. Cellulaire/Molecul., CNRS, College de France, 49 bis,

Avenue de la Belle-Gabrielle, F-94736 Nogent-sur-Marne Cedex France
ANN. CARDIOL. ANGEIOL. (France) , 1993, 42/2 (A.5-A.12)
CODEN: ACAAB ISSN: 0003-3928
LANGUAGES: French SUMMARY LANGUAGES: English; French

Endothelial emergence is the best known aspect of vessel formation during embryogenesis. It has been analyzed in an avian model of chimeras at the time of organogenesis or morphogenesis. These chimeras involve two species, chick and quail, whose cells may be distinguished on the basis of distinct nuclear heterochromatin patterns or through the use of antibodies that are species and lineage specific. QH1, a monoclonal antibody obtained in our group, whose affinity is restricted to the quail hemangioblastic lineage (**endothelial** and hemopoietic cells), has been a sensitive probe to study the origin of these cells in various chimeric patterns. By **transplanting** organ rudiments or primordial germ layers, we have shown that endothelium emergence in organ rudiments occurs through two different mechanisms, vasculogenesis or in situ differentiation, and **angiogenesis** or colonization by extrinsic precursors. Vasculogenesis occurs in the mesoderm of internal organ rudiments while **angiogenesis** occurs in external rudiments. The conclusion is that associated endoderm exerts a positive influence on the emergence of **endothelial progenitors** from mesodermal precursors.

6/7/6 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09365035 98082973

G-protein-coupled receptor of Kaposi's sarcoma-associated herpesvirus is a viral oncogene and **angiogenesis** activator [see comments]

Bais C; Santomasso B; Coso O; Arvanitakis L; Raaka EG; Gutkind JS; Asch AS; Cesarman E; Gerhengorn MC; Mesri EA

Laboratory of Viral Oncogenesis, Division of Hematology-Oncology, Cornell University Medical College, New York, New York 10021, USA.

Nature (ENGLAND) Jan 1 1998, 391 (6662) p86-9, ISSN 0028-0836
Journal Code: NSC
Comment in Nature 1998 Jan 1;391(6662):24-5
Languages: ENGLISH
Document type: JOURNAL ARTICLE

The Kaposi's sarcoma-associated herpesvirus (KSHV/HHV8) is a gamma-2 herpesvirus that is implicated in the pathogenesis of Kaposi's sarcoma and of primary effusion B-cell lymphomas (PELs). KSHV infects malignant and **progenitor** cells of Kaposi's sarcoma and PEL, it encodes putative oncogenes and genes that may cause Kaposi's sarcoma pathogenesis by stimulating **angiogenesis** . The G-protein-coupled receptor encoded by an open reading frame (ORF 74) of KSHV is expressed in Kaposi's sarcoma lesions and in PEL and stimulates signalling pathways linked to cell proliferation in a constitutive (agonist-independent) way. Here we show that signalling by this KSHV G-protein-coupled receptor leads to cell transformation and tumorigenicity, and induces a switch to an angiogenic phenotype mediated by vascular **endothelial** growth factor, an **angiogenesis** and Kaposi's-spindle-cell growth factor. We find that this receptor can activate two protein kinases, JNK/SAPK and p38MAPK, by triggering signalling cascades like those induced by inflammatory cytokines that are **angiogenesis** activators and mitogens for Kaposi's sarcoma cells and B cells. We conclude that the KSHV G-protein-coupled receptor is a viral oncogene that can exploit cell signalling pathways to induce transformation and **angiogenesis** in KSHV-mediated oncogenesis.

6/7/7 (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09199847 95281551

Angiogenic properties of human immunodeficiency virus type 1 Tat protein.
Albini A; Barillari G; Benelli R; Gallo RC; Ensoli B
Laboratory of Tumor Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892, USA.
Proc Natl Acad Sci U S A (UNITED STATES) May 23 1995, 92 (11) p4838-42, ISSN 0027-8424 Journal Code: PV3
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Extracellular human immunodeficiency virus type 1 (HIV-1) Tat protein promotes growth of spindle cells derived from AIDS-associated Kaposi sarcoma (AIDS-KS), an angioproliferative disease very frequent in HIV-1-infected individuals. Normal vascular cells, **progenitors** of AIDS-KS cells, proliferate in response to Tat after exposure to inflammatory cytokines, whose levels are augmented in HIV-1-infected individuals and in KS lesions. Here we show that Tat also promotes AIDS-KS and normal vascular cells to migrate and to degrade the basement membrane and stimulates **endothelial** cell morphogenesis on a matrix substrate. These effects are obtained at picomolar concentrations of exogenous Tat and are promoted by the treatment of the cells with the same inflammatory cytokines stimulating expression of the receptors for Tat, the integrins alpha 5 beta 1 and alpha v beta 3. Thus, under specific circumstances, Tat has angiogenic properties. As Tat and its receptors are present in AIDS-KS lesions, these data may explain some of the mechanisms by which Tat can induce **angiogenesis** and cooperate in the development of AIDS-KS.

6/7/8 (Item 3 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09181664 97454406
CD34 expression patterns during early mouse development are related to modes of blood vessel formation and reveal additional sites of hematopoiesis.
Wood HB; May G; Healy L; Enver T; Morriss-Kay GM
Department of Human Anatomy, University of Oxford, UK.
Blood (UNITED STATES) Sep 15 1997, 90 (6) p2300-11, ISSN 0006-4971 Journal Code: A8G
Languages: ENGLISH
Document type: JOURNAL ARTICLE
CD34 is a cell surface glycoprotein that is selectively expressed within the human hematopoietic system on stem and **progenitor** cells, and in early blood vessels. To elucidate its functions during early blood vessel formation and hematopoiesis, we analyzed the expression patterns, in day 8 to day 10 mouse embryos, of CD34 RNA by in situ hybridization and protein by immunohistochemistry using the monclonal antibody RAM 34. Levels of expression in embryonic blood vessels were correlated with the mode of vessel formation, being high in pre-**endothelial** cells and in vessels forming by vasculogenesis (particularly the dorsal aortae) or **angiogenesis**, but low in vessels forming by coalescence (the cardinal veins). CD34+ erythroid cells, presumably of yolk sac origin, were present in the liver of day 10 embryos; at the same stage, putative definitive hematopoietic cells, strongly CD34+, were present in the para-aortic mesenchyme. Possible sites of hemangioblastic differentiation were detected in the form of CD34+ endothelium-attached hematopoietic cells in the dorsal aorta and in two previously unreported locations, the proximal umbilical and vitelline arteries. These observations suggest functions for CD34 in relation to specific modes of blood vessel formation, and a hemangioblastic role in both embryonic and extraembryonic sites.

6/7/9 (Item 4 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08928067 97172556
Isolation of putative **progenitor endothelial** cells for **angiogenesis**.
Asahara T; Murohara T; Sullivan A; Silver M; van der Zee R; Li T; Witzenbichler B; Schatteman G; Isner JM
Department of Medicine (Cardiology), St. Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135, USA.
Science (UNITED STATES) Feb 14 1997, 275 (5302) p964-7, ISSN 0036-8075 Journal Code: UJ7
Contract/Grant No.: 2824; 53354; 57516
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Putative **endothelial** cell (EC) **progenitors** or angioblasts were isolated from human peripheral blood by magnetic bead selection on the basis of cell surface antigen expression. In vitro, these cells differentiated into ECs. In animal models of **ischemia**, heterologous, homologous, and autologous EC **progenitors** incorporated into sites of active **angiogenesis**. These findings suggest that EC **progenitors** may be useful for augmenting collateral vessel growth to **ischemic** tissues (therapeutic **angiogenesis**) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian **angiogenesis**.

6/7/10 (Item 5 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08916060 97165079
Constitutive production and thrombin-induced release of vascular **endothelial** growth factor by human megakaryocytes and platelets.
Mohle R; Green D; Moore MA; Nachman RL; Rafii S
Developmental Hematopoiesis Laboratory, Memorial Sloan-Kettering Cancer Center, New York, NY 10021, USA.
Proc Natl Acad Sci U S A (UNITED STATES) Jan 21 1997, 94 (2) p663-8, ISSN 0027-8424 Journal Code: PV3
Contract/Grant No.: KO8-HL-02926, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE
We have shown that coculture of bone marrow microvascular **endothelial** cells with hematopoietic **progenitor** cells results in proliferation and differentiation of megakaryocytes. In these long-term cultures, bone marrow microvascular **endothelial** cell monolayers maintain their cellular integrity in the absence of exogenous **endothelial** growth factors. Because this interaction may involve paracrine secretion of cytokines, we evaluated megakaryocytic cells for secretion of cytokines, we evaluated megakaryocytic cells for secretion of vascular **endothelial** growth factor (VEGF). Megakaryocytes (CD41a+) were generated by ex vivo expansion of hematopoietic **progenitor** cells with kit-ligand and thrombopoietin for 10 days and further purified with immunomagnetic microbeads. Using reverse transcription-PCR, we showed that megakaryocytic cell lines (Dami, HEL) and purified megakaryocytes expressed mRNA of the three VEGF isoforms (121, 165, and 189 amino acids). Large quantities of VEGF (> 1 ng/10(6) cells/3 days) were detected in the supernatant of Dami cells, ex vivo-generated megakaryocytes, and CD41a+ cells isolated from bone marrow. The constitutive secretion of VEGF by CD41a+ cells was stimulated by growth factors of the megakaryocytic lineage (interleukin 3, thrombopoietin). Western blotting of heparin-Sepharose-enriched supernatant mainly detected the isoform VEGF165. In addition, immunohistochemistry showed intracytoplasmic VEGF in polyploid megakaryocytes. Thrombin stimulation of megakaryocytes and platelets resulted in rapid release of VEGF within 30 min. We conclude that human megakaryocytes produce and secrete VEGF in an inducible manner. Within the bone marrow microenvironment, VEGF secreted by megakaryocytes may

contribute to the proliferation of **endothelial** cells. VEGF delivered to sites of vascular injury by activated platelets may initiate **angiogenesis**.

6/7/11 (Item 6 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08780989 97053801
Cell autonomous functions of the receptor tyrosine kinase TIE in a late phase of angiogenic capillary growth and **endothelial** cell survival during murine development.
Partanen J; Puri MC; Schwartz L; Fischer KD; Bernstein A; Rossant J
Program in Molecular Biology and Cancer, Mount Sinai Hospital, Toronto, Ontario, Canada.
Development (ENGLAND) Oct 1996, 122 (10) p3013-21, ISSN 0950-1991
Journal Code: ECW
Languages: ENGLISH
Document type: JOURNAL ARTICLE
TIE is a receptor tyrosine kinase expressed in both mature **endothelial** cells and their precursors, as well as in some hematopoietic cells. Mouse embryos homozygous for a disrupted Tie allele die at midgestation due to impaired **endothelial** cell integrity and resulting hemorrhage. Here we have performed chimeric analysis to study further the function of the murine TIE in the development of embryonic vasculature and in the hematopoietic system. Cells lacking a functional Tie gene (tie(lcz)/tie(lczn-) cells) contributed to the embryonic vasculature at E10.5 as efficiently as cells heterozygous for a targeted Tie allele (tie(lcz)/+ cells). Thus, TIE does not play a significant role in vasculogenesis or in early angiogenic processes, such as formation of the intersomitic arteries and limb bud vascularization. At E15.5 tie(lcz)/tie(lczn-) cells still readily contributed to major blood vessels and to **endothelial** cells of organs such as lung and heart, which have been suggested to be vascularized by angioblast differentiation. In contrast, the tie(lcz)/tie(lczn-) cells were selected against in the capillary plexuses of several angiogenically vascularized tissues, such as brain and kidney. Our results thus support a role for TIE in late phases of **angiogenesis** but not vasculogenesis. Furthermore, the results suggest that different mechanisms regulate early and late **angiogenesis** and provide support for a model of differential organ vascularization by vasculogenic or angiogenic processes. Analysis of adult chimeras suggested that TIE is required to support the survival or proliferation of certain types of **endothelial** cells demonstrating heterogeneity in the growth/survival factor requirements in various **endothelial** cell populations. Chimeric analysis of adult hematopoietic cell populations, including peripheral platelets and bone marrow **progenitor** cells, revealed that tie(lcz)/tie(lczn-) cells were able to contribute to these cell types in a way indistinguishable from tie(lcz)/+ or wild-type cells. Thus, the primary function of TIE appears to be restricted to the **endothelial** cell lineage.

6/7/12 (Item 7 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08590446 96206025
Endothelial area as a prognostic indicator for invasive breast carcinoma.
Simpson JF; Ahn C; Battifora H; Esteban JM
Department of Pathology, City of Hope National Medical Center, Duarte, California, USA.
Cancer (UNITED STATES) May 15 1996, 77 (10) p2077-85, ISSN 0008-543X
Journal Code: CLZ

Languages: ENGLISH
Document type: JOURNAL ARTICLE
BACKGROUND: Vascular enumeration using antibodies to Factor VIII has been reported to be an independent prognostic indicator of invasive breast carcinoma. METHODS: To eliminate potential subjectivity in distinguishing between individual vessels, especially in areas of tangled capillaries, total **endothelial** area (EA) was assessed using a Samba 4000 image analyzer. One hundred seventy-eight invasive breast carcinomas (Stage 1 and 2, mean follow-up: 71 months) were immumostained for the presence of CD34, the human hematopoietic **progenitor** cell antigen also present in endothelium, and EA was quantitated within 5 adjacent 20X fields (0.74 mm2). Additionally, these same vessels were manually counted from the image analyzer. Manual counts were also made from a photomicrograph representative of a single 10X field (1.06 mm2). RESULTS: High grade carcinomas contained greater **endothelial** area than low grade carcinomas (P = 0.0001). **Endothelial** area was prognostically significant (P = 0.004) in univariate analysis of disease-free survival (DFS) and overall survival (OS), as were stage of disease, tumor size, and combined histologic grade (P < or = 0.024). Manual vessel counts from the monitor were significant for OS only. Manual vessel counts from photomicrographs showed no statistically significant association with DFS or OS. In multivariate analysis, EA, but not vessel enumeration, remained as an independent predictor for OS (lymph node negative patients only, n = 87) and for DFS (lymph node positive patients only, n = 91). For the entire group of patients (lymph node negative and lymph node positive) independent predictors of DFS and OS were tumor grade and size (P < or = 0.006). CONCLUSIONS: Of the three methods used to evaluate tumor **angiogenesis**, total **endothelial** area, as objectively evaluated by image analysis, was the only independent prognostic indicator for OS for patients with lymph node negative invasive breast carcinoma.

6/7/13 (Item 8 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07791818 93208880
High affinity VEGF binding and developmental expression suggest Flk-1 as a major regulator of vasculogenesis and **angiogenesis**.
Millauer B; Wizigmann-Voos S; Schnurch H; Martinez R; Moller NP; Risau W; Ullrich A
Department of Molecular Biology, Max Planck Institute for Biochemistry, Martinsried, Federal Republic of Germany.
Cell (UNITED STATES) Mar 26 1993, 72 (6) p835-46, ISSN 0092-8674
Journal Code: CQ4
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Examination of flk-1 receptor tyrosine kinase mRNA expression by in situ hybridization analysis revealed specific association with **endothelial** cells at all stages of mouse development, including the blood islands in the yolk sac of day 8.5-10.5 embryos, in which the early **progenitors** of this lineage originate. flk-1 transcripts were abundant in proliferating **endothelial** cells of vascular sprouts and branching vessels of embryonic and early postnatal brain, but were drastically reduced in adult brain, where proliferation has ceased. Identification of the angiogenic mitogen, vascular **endothelial** growth factor (VEGF), as the high affinity ligand of Flk-1 and correlation of the temporal and spatial expression pattern of Flk-1 and VEGF suggest a major role of this ligand-receptor signaling system in vasculogenesis and **angiogenesis**.

6/7/14 (Item 9 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07542369 93263568
[Embryology of vessels]
L'embryologie des vaisseaux.
Dieterlen-Lievre F; Pardanaud L
Institut d'Embryologie Cellulaire et Moleculaire du CNRS, College de France, Nogent-sur-Marne.
Ann Cardiol Angeiol (Paris) (FRANCE) Feb 1993, 42 (2) pA5-12, ISSN 0003-3928 Journal Code: 502
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract
Endothelial emergence is the best known aspect of vessel formation during embryogenesis. It has been analyzed in an avian model of chimeras at the time of organogenesis or morphogenesis. These chimeras involve two species, chick and quail, whose cells may be distinguished on the basis of distinct nuclear heterochromatin patterns or through the use of antibodies that are species and lineage specific. QH1, a monoclonal antibody obtained in our group, whose affinity is restricted to the quail hemangioblastic lineage (**endothelial** and hemopoietic cells), has been a sensitive probe to study the origin of these cells in various chimeric patterns. By **transplanting** organ rudiments or primordial germ layers, we have shown that endothelium emergence in organ rudiments occurs through two different mechanisms, vasculogenesis or in situ differentiation, and **angiogenesis** or colonization by extrinsic precursors. Vasculogenesis occurs in the mesoderm of internal organ rudiments while **angiogenesis** occurs in external rudiments. The conclusion is that associated endoderm exerts a positive influence on the emergence of **endothelial** **progenitors** from mesodermal precursors.

6/7/15 (Item 10 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07001796 91288073
[Metastatic dissemination of cancer cells]
Dissemination metastatique des cellules cancereuses.
Cornil I; Theodorescu D; Kerbel RS; Poupon MF
Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada.
Pathol Biol (Paris) (FRANCE) Apr 1991, 39 (4) p300-7, ISSN 0369-8114 Journal Code: OSG
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL English Abstract
During the natural history of a tumor, cancer cells become more and more aggressive and their increasing malignancy leads usually to the patient's death. The expression of malignant properties by tumor cells is manifested by the occurrence of metastases and is the result of an overexpression of molecules that are normally or barely non expressed by the normal cell **progenitors** . These molecules can be involved in cell attachment (receptor to the extracellular matrix), in proteolysis (collagenases), in **angiogenesis** (b FGF), in adhesion to **endothelial** cells, in resistance to the immune system. The genetic instability of tumor cells favors the amplification, mutation and gene translocation events, resulting in the activation of some genes or/and oncogenes which might direct the expression of the malignant properties. Finally, metastatic cells have been shown to have a growth advantage over non metastatic cells, so that metastatic cell population becomes ultimately numerously dominant in the primary tumor. The current knowledge about the malignant cell properties allow us to begin to understand how a cancer cell becomes metastatic and how the metastatic dissemination is usually an ineluctable process. (30 Refs.)

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File 410:Chronolog(R)  1981-1998/Mar
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? begin 55,72,154,399,351

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  File 154:MEDLINE(R)  1985-1998/May W2
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*File 154: 1998 MEDLINE reload available.
           ******Accession numbers have changed*****
  File 399:CA SEARCH(R)  1967-1998/UD=12812
        (c) 1998 American Chemical Society
*File 399: Use is subject to the terms of your user/customer agreement.
RANK charge added; see HELP RATES 399.
  File 351:DERWENT WPI  1963-1998/UD=9811;UP=9808;UM=9806
        (c)1998 Derwent Info Ltd
*File 351: Enter HELP NEWS 351 for info. about changes in DWPI coverage.
Output formats have changed for 1998.  Enter HELP FORM351 for details.

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E2        2  AU=ISNENGHI, EDOARDO
E3        0 *AU=ISNER
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E5        1  AU=ISNER A B
E6       10  AU=ISNER A F
E7       13  AU=ISNER A.F.
E8       13  AU=ISNER AF
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E11       1  AU=ISNER J D
E12       1  AU=ISNER J J

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E14       4  AU=ISNER J.
E15     227  AU=ISNER J.M.
E16     210  AU=ISNER JM
E17       1  AU=ISNER L
E18       1  AU=ISNER M-E
E19       1  AU=ISNER ME
E20       1  AU=ISNER P D
E21       1  AU=ISNER P.D.
E22       1  AU=ISNER PD
E23       3  AU=ISNER R E
E24       9  AU=ISNER R J

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? s e9-e16

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               1  AU=ISNER J D
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               4  AU=ISNER J.
             227  AU=ISNER J.M.
             210  AU=ISNER JM
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      S1      933  E9-E16
? s s1 and endotheli? and progenitor?

            933  S1
         246472  ENDOTHELI?
          46655  PROGENITOR?
      S2      4  S1 AND ENDOTHELI? AND PROGENITOR?
? rd s2

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>>>Records from unsupported files will be retained in the RD set.
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? t s3/3/all


 3/3/1     (Item 1 from file: 55)
DIALOG(R)File  55:BIOSIS PREVIEWS(R)
(c) 1998 BIOSIS. All rts. reserv.

14019194     BIOSIS Number: 01019194
  Circulating endothelial progenitor cells in peripheral blood
incorporate into re-endothelialization after vascular injury
  Asahara T; Krasinski K L; Chen D; Sullivan A B; Kearney M; Silver M; Li T
; Isner J M
  St. Elizabeth's Med. Center, Boston, MA, USA
  Circulation 96 (8 SUPPL.). 1997.  I725.
  Full Journal Title:  70th Scientific Sessions of the American Heart
Association, Orlando, Florida, USA, November 9-12, 1997.  Circulation
  ISSN: 0009-7322
  Language: ENGLISH
  Document Type: CONFERENCE PAPER
  Print Number: Biological Abstracts/RRM Vol. 050 Iss. 001 Ref. 006975


 3/3/2     (Item 2 from file: 55)
DIALOG(R)File  55:BIOSIS PREVIEWS(R)
(c) 1998 BIOSIS. All rts. reserv.

13451523     BIOSIS Number: 99451523
  Isolation of putative progenitor endothelial cells for
angiogenesis
  Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T;
Witzenbichler B; Schatteman G; Isner J M
  Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med.,
736 Cambridge St., Boston, MA 02135, USA
  Science (Washington D C) 275 (5302). 1997.  964-967.
  Full Journal Title:  Science (Washington D C)
  ISSN: 0036-8075
  Language: ENGLISH
  Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192
? s endothelia? and progenitor? and (angiogenesis or ischemi?)

         160976  ENDOTHELIA?
          46655  PROGENITOR?
          19304  ANGIOGENESIS
         265961  ISCHEMI?
      S4     67  ENDOTHELIA? AND PROGENITOR? AND (ANGIOGENESIS OR
                 ISCHEMI?)
? s s4 and (transplant? or neovascular?)

             67  S4
         425934  TRANSPLANT?
          17545  NEOVASCULAR?
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S5 21 S4 AND (TRANSPLANT? OR NEOVASCULAR?)
? rd s5

>>>Duplicate detection is not supported for File 351.

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S6 15 RD S5 (unique items)
? t s6/7/all

6/7/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

14017485 BIOSIS Number: 01017485
Vasculogenesis, developed by **endothelial progenitor** cells, has significant role in **neovascularization** in severe **ischemia**
Asahara T; Takahashi T; Silver M; Li T; Yang J
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 96 (8 SUPPL.). 1997. I415-I416.
Full Journal Title: 70th Scientific Sessions of the American Heart Association, Orlando, Florida, USA, November 9-12, 1997. Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 050 Iss. 001 Ref. 005266

6/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11802916 BIOSIS Number: 98402916
Failure of blood-island formation and vasculogenesis in Flk-1-deficient mice
Shalaby F; Rossant J; Yamaguchi T P; Gertsenstein M; Wu X-F; Breitman M L ; Schuh A C
Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., 600 University Avenue, Toronto, ON M5G 1X5, Canada
Nature (London) 376 (6535). 1995. 62-66.
Full Journal Title: Nature (London)
ISSN: 0028-0836
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 006 Ref. 080508
The receptor tyrosine kinase Flk-1 (ref. 1) is believed to play a pivotal role in **endothelial** development. Expression of the Flk-1 receptor is restricted to **endothelial** cells and their embryonic precursors, and is complementary to that of its ligand, vascular **endothelial** growth factor (VEGF), which is an **endothelial**-specific mitogen. Highest levels of flk-1 expression are observed during embryonic vasculogenesis and **angiogenesis**, and during pathological processes associated with **neovascularization**, such as tumour **angiogenesis**. Because flk-1 expression can be detected in presumptive mesodermal yolk-sac blood-island **progenitors** as early as 7.0 days postcoitum, Flk-1 may mark the putative common embryonic **endothelial** and haematopoietic precursor, the haemangioblast, and thus may also be involved in early haematopoiesis. Here we report the generation of mice deficient in Flk-1 by disruption of the gene using homologous recombination in embryonic stem (ES) cells. Embryos homozygous for this mutation die in utero between 8.5 and 9.5 days post-coitum, as a result of an early defect in the development of haematopoietic and **endothelial** cells. Yolk-sac blood islands were absent at 7.5 days, organized blood vessels could not be observed in the embryo or yolk sac at any stage, and haematopoietic **progenitors** were severely reduced. These results indicate that Flk-1 is essential for yolk-sac blood-island formation and vasculogenesis in the mouse embryo.

6/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11488800 BIOSIS Number: 98088800
Transformation of fibroblasts into **endothelial** cells during **angiogenesis**
Kon K; Fujiwara T
Lab. Animal Center, Sch. Med., Ehime Univ., Shigenobu, Ehime 791-02, Japan
Cell & Tissue Research 278 (3). 1994. 625-628.
Full Journal Title: Cell & Tissue Research
ISSN: 0302-766X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 005 Ref. 059210
Light- and electron-microscopic autoradiography have been used to study fibroblast transformation into **endothelial** cells in the formation of new blood vessels during wound healing in rabbit ear chambers. When cultured fibroblasts labeled with tritium thymidine were **transplanted** autologously into the chambers, newly formed blood vessels contained **endothelial** cells labeled with tritium thymidine. This result suggests that fibroblasts play a pivotal role in **angiogenesis**, as **progenitors** of **endothelial** cells in newly formed blood vessels.

6/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7697059 BIOSIS Number: 90065059
LEUKOCYTE ANTIGEN CD34 IS EXPRESSED BY A SUBSET OF CULTURED **ENDOTHELIAL** CELLS AND ON **ENDOTHELIAL** ABLUMINAL MICROPROCESSES IN THE TUMOR STROMA
SCHLINGEMANN R O; RIETVELD F J R; DE WAAL R M W; BRADLEY N J; SKENE A I; DAVIES A J S; GREAVES M F; DENEKAMP J; RUITER D J
DEP. PATHOL., UNIV. HOSP. NIJMEGEN, P.O. BOX 9101, 6500 HB NIJMEGEN, NETH.
LAB INVEST 62 (6). 1990. 690-696. CODEN: LAINA
Full Journal Title: Laboratory Investigation
Language: ENGLISH
It has been reported that the human haemopoietic **progenitor** cell antigen CD34 is also expressed by vascular structures. To investigate its precise vascular localization, we have studied the cellular and subcellular distribution of CD34 in normal tissues and pathologic tissues with **neovascularization** . In normal resting tissues, anti-CD34 antibodies, ICH3 and QBEND-10 predominantly stain the luminal **endothelial** membrane, whereas the abluminal membrane is negative or weakly positive. In contrast, a striking staining of **endothelial** abluminal microprocesses (EAM) was found in the tumor stroma. These structures, measuring up to 20 .mu.m in length, could be observed in thick vibratome sections both at the tips of vascular sprouts and, also frequently, on fully formed microvessels. The number of vascular sprouts and EAM varied widely between different tumors. CD34-stained EAM were sparsely present in fetal tissue of 10 weeks gestation, but they could not be demonstrated in granulation tissue of wound healing. By immunoelectron microscopy, the EAM were continuous with the cytoplasm of **endothelial** cells showing an immature phenotype as seen in regeneration. In cultured human umbilical vein endothelium, CD34 was preferentially found on a small subset of cells with the morphologic appearance of migrating cells. These findings suggest that CD34 is an **endothelial** marker for EAM present during **angiogenesis**.

6/7/5 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

8821673 EMBASE No: 93125395
Embryology of the vascular system
L'EMBRYOLOGIE DES VAISSEAUX
Dieterlen-Lievre F.; Pardanaud L.
Inst. d'Embryol. Cellulaire/Molecul., CNRS, College de France, 49 bis, Avenue de la Belle-Gabrielle, F-94736 Nogent-sur-Marne Cedex France
ANN. CARDIOL. ANGEIOL. (France) , 1993, 42/2 (A.5-A.12)
CODEN: ACAAB ISSN: 0003-3928
LANGUAGES: French SUMMARY LANGUAGES: English; French
Endothelial emergence is the best known aspect of vessel formation during embryogenesis. It has been analyzed in an avian model of chimeras at the time of organogenesis or morphogenesis. These chimeras involve two species, chick and quail, whose cells may be distinguished on the basis of distinct nuclear heterochromatin patterns or through the use of antibodies that are species and lineage specific. QH1, a monoclonal antibody obtained in our group, whose affinity is restricted to the quail hemangioblastic lineage (**endothelial** and hemopoietic cells), has been a sensitive probe to study the origin of these cells in various chimeric patterns. By **transplanting** organ rudiments or primordial germ layers, we have shown that endothelium emergence in organ rudiments occurs through two different mechanisms, vasculogenesis or in situ differentiation, and **angiogenesis** or colonization by extrinsic precursors. Vasculogenesis occurs in the mesoderm of internal organ rudiments while **angiogenesis** occurs in external rudiments. The conclusion is that associated endoderm exerts a positive influence on the emergence of **endothelial progenitors** from mesodermal precursors.

6/7/6 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09365035 98082973
G-protein-coupled receptor of Kaposi's sarcoma-associated herpesvirus is a viral oncogene and **angiogenesis** activator [see comments]
Bais C; Santomasso B; Coso O; Arvanitakis L; Raaka EG; Gutkind JS; Asch AS; Cesarman E; Gerhengorn MC; Mesri EA
Laboratory of Viral Oncogenesis, Division of Hematology-Oncology, Cornell University Medical College, New York, New York 10021, USA.
Nature (ENGLAND) Jan 1 1998, 391 (6662) p86-9, ISSN 0028-0836
Journal Code: NSC
Comment in Nature 1998 Jan 1;391(6662):24-5
Languages: ENGLISH
Document type: JOURNAL ARTICLE
The Kaposi's sarcoma-associated herpesvirus (KSHV/HHV8) is a gamma-2 herpesvirus that is implicated in the pathogenesis of Kaposi's sarcoma and of primary effusion B-cell lymphomas (PELs). KSHV infects malignant and **progenitor** cells of Kaposi's sarcoma and PEL, it encodes putative oncogenes and genes that may cause Kaposi's sarcoma pathogenesis by stimulating **angiogenesis** . The G-protein-coupled receptor encoded by an open reading frame (ORF 74) of KSHV is expressed in Kaposi's sarcoma lesions and in PEL and stimulates signalling pathways linked to cell proliferation in a constitutive (agonist-independent) way. Here we show that signalling by this KSHV G-protein-coupled receptor leads to cell transformation and tumorigenicity, and induces a switch to an angiogenic phenotype mediated by vascular **endothelial** growth factor, an **angiogenesis** and Kaposi's-spindle-cell growth factor. We find that this receptor can activate two protein kinases, JNK/SAPK and p38MAPK, by triggering signalling cascades like those induced by inflammatory cytokines that are **angiogenesis** activators and mitogens for Kaposi's sarcoma cells and B cells. We conclude that the KSHV G-protein-coupled receptor is

a viral oncogene that can exploit cell signalling pathways to induce transformation and **angiogenesis** in KSHV-mediated oncogenesis.

6/7/7 (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09199847 95281551
Angiogenic properties of human immunodeficiency virus type 1 Tat protein.
Albini A; Barillari G; Benelli R; Gallo RC; Ensoli B
Laboratory of Tumor Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892, USA.
Proc Natl Acad Sci U S A (UNITED STATES) May 23 1995, 92 (11) p4838-42, ISSN 0027-8424 Journal Code: PV3
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Extracellular human immunodeficiency virus type 1 (HIV-1) Tat protein promotes growth of spindle cells derived from AIDS-associated Kaposi sarcoma (AIDS-KS), an angioproliferative disease very frequent in HIV-1-infected individuals. Normal vascular cells, **progenitors** of AIDS-KS cells, proliferate in response to Tat after exposure to inflammatory cytokines, whose levels are augmented in HIV-1-infected individuals and in KS lesions. Here we show that Tat also promotes AIDS-KS and normal vascular cells to migrate and to degrade the basement membrane and stimulates **endothelial** cell morphogenesis on a matrix substrate. These effects are obtained at picomolar concentrations of exogenous Tat and are promoted by the treatment of the cells with the same inflammatory cytokines stimulating expression of the receptors for Tat, the integrins alpha 5 beta 1 and alpha v beta 3. Thus, under specific circumstances, Tat has angiogenic properties. As Tat and its receptors are present in AIDS-KS lesions, these data may explain some of the mechanisms by which Tat can induce **angiogenesis** and cooperate in the development of AIDS-KS.

6/7/8 (Item 3 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09181664 97454406
CD34 expression patterns during early mouse development are related to modes of blood vessel formation and reveal additional sites of hematopoiesis.
Wood HB; May G; Healy L; Enver T; Morriss-Kay GM
Department of Human Anatomy, University of Oxford, UK.
Blood (UNITED STATES) Sep 15 1997, 90 (6) p2300-11, ISSN 0006-4971 Journal Code: A8G
Languages: ENGLISH
Document type: JOURNAL ARTICLE
CD34 is a cell surface glycoprotein that is selectively expressed within the human hematopoietic system on stem and **progenitor** cells, and in early blood vessels. To elucidate its functions during early blood vessel formation and hematopoiesis, we analyzed the expression patterns, in day 8 to day 10 mouse embryos, of CD34 RNA by in situ hybridization and protein by immunohistochemistry using the monclonal antibody RAM 34. Levels of expression in embryonic blood vessels were correlated with the mode of vessel formation, being high in pre-**endothelial** cells and in vessels forming by vasculogenesis (particularly the dorsal aortae) or **angiogenesis**, but low in vessels forming by coalescence (the cardinal veins). CD34+ erythroid cells, presumably of yolk sac origin, were present in the liver of day 10 embryos; at the same stage, putative definitive hematopoietic cells, strongly CD34+, were present in the para-aortic mesenchyme. Possible sites of hemangioblastic differentiation were detected in the form of CD34+ endothelium-attached hematopoietic cells in the dorsal aorta and in two previously unreported locations, the proximal umbilical

and vitelline arteries. These observations suggest functions for CD34 in relation to specific modes of blood vessel formation, and a hemangioblastic role in both embryonic and extraembryonic sites.

6/7/9 (Item 4 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08928067 97172556
Isolation of putative **progenitor endothelial** cells for **angiogenesis**.
Asahara T; Murohara T; Sullivan A; Silver M; van der Zee R; Li T; Witzenbichler B; Schatteman G; Isner JM
Department of Medicine (Cardiology), St. Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135, USA.
Science (UNITED STATES) Feb 14 1997, 275 (5302) p964-7, ISSN 0036-8075 Journal Code: UJ7
Contract/Grant No.: 2824; 53354; 57516
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Putative **endothelial** cell (EC) **progenitors** or angioblasts were isolated from human peripheral blood by magnetic bead selection on the basis of cell surface antigen expression. In vitro, these cells differentiated into ECs. In animal models of **ischemia**, heterologous, homologous, and autologous EC **progenitors** incorporated into sites of active **angiogenesis**. These findings suggest that EC **progenitors** may be useful for augmenting collateral vessel growth to **ischemic** tissues (therapeutic **angiogenesis**) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian **angiogenesis**.

6/7/10 (Item 5 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08916060 97165079
Constitutive production and thrombin-induced release of vascular **endothelial** growth factor by human megakaryocytes and platelets.
Mohle R; Green D; Moore MA; Nachman RL; Rafii S
Developmental Hematopoiesis Laboratory, Memorial Sloan-Kettering Cancer Center, New York, NY 10021, USA.
Proc Natl Acad Sci U S A (UNITED STATES) Jan 21 1997, 94 (2) p663-8, ISSN 0027-8424 Journal Code: PV3
Contract/Grant No.: KO8-HL-02926, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE
We have shown that coculture of bone marrow microvascular **endothelial** cells with hematopoietic **progenitor** cells results in proliferation and differentiation of megakaryocytes. In these long-term cultures, bone marrow microvascular **endothelial** cell monolayers maintain their cellular integrity in the absence of exogenous **endothelial** growth factors. Because this interaction may involve paracrine secretion of cytokines, we evaluated megakaryocytic cells for secretion of cytokines, we evaluated megakaryocytic cells for secretion of vascular **endothelial** growth factor (VEGF). Megakaryocytes (CD41a+) were generated by ex vivo expansion of hematopoietic **progenitor** cells with kit-ligand and thrombopoietin for 10 days and further purified with immunomagnetic microbeads. Using reverse transcription-PCR, we showed that megakaryocytic cell lines (Dami, HEL) and purified megakaryocytes expressed mRNA of the three VEGF isoforms (121, 165, and 189 amino acids). Large quantities of VEGF (> 1 ng/10(6) cells/3 days) were detected in the supernatant of Dami cells, ex vivo-generated megakaryocytes, and CD41a+

cells isolated from bone marrow. The constitutive secretion of VEGF by CD41a+ cells was stimulated by growth factors of the megakaryocytic lineage (interleukin 3, thrombopoietin). Western blotting of heparin-Sepharose-enriched supernatant mainly detected the isoform VEGF165. In addition, immunohistochemistry showed intracytoplasmic VEGF in polyploid megakaryocytes. Thrombin stimulation of megakaryocytes and platelets resulted in rapid release of VEGF within 30 min. We conclude that human megakaryocytes produce and secrete VEGF in an inducible manner. Within the bone marrow microenvironment, VEGF secreted by megakaryocytes may contribute to the proliferation of **endothelial** cells. VEGF delivered to sites of vascular injury by activated platelets may initiate **angiogenesis**.

6/7/11 (Item 6 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08780989 97053801

Cell autonomous functions of the receptor tyrosine kinase TIE in a late phase of angiogenic capillary growth and **endothelial** cell survival during murine development.

Partanen J; Puri MC; Schwartz L; Fischer KD; Bernstein A; Rossant J
Program in Molecular Biology and Cancer, Mount Sinai Hospital, Toronto, Ontario, Canada.

Development (ENGLAND) Oct 1996, 122 (10) p3013-21, ISSN 0950-1991
Journal Code: ECW
Languages: ENGLISH
Document type: JOURNAL ARTICLE

TIE is a receptor tyrosine kinase expressed in both mature **endothelial** cells and their precursors, as well as in some hematopoietic cells. Mouse embryos homozygous for a disrupted Tie allele die at midgestation due to impaired **endothelial** cell integrity and resulting hemorrhage. Here we have performed chimeric analysis to study further the function of the murine TIE in the development of embryonic vasculature and in the hematopoietic system. Cells lacking a functional Tie gene (tie(lcz)/tie(lczn-) cells) contributed to the embryonic vasculature at E10.5 as efficiently as cells heterozygous for a targeted Tie allele (tie(lcz)/+ cells). Thus, TIE does not play a significant role in vasculogenesis or in early angiogenic processes, such as formation of the intersomitic arteries and limb bud vascularization. At E15.5 tie(lcz)/tie(lczn-) cells still readily contributed to major blood vessels and to **endothelial** cells of organs such as lung and heart, which have been suggested to be vascularized by angioblast differentiation. In contrast, the tie(lcz)/tie(lczn-) cells were selected against in the capillary plexuses of several angiogenically vascularized tissues, such as brain and kidney. Our results thus support a role for TIE in late phases of **angiogenesis** but not vasculogenesis. Furthermore, the results suggest that different mechanisms regulate early and late **angiogenesis** and provide support for a model of differential organ vascularization by vasculogenic or angiogenic processes. Analysis of adult chimeras suggested that TIE is required to support the survival or proliferation of certain types of **endothelial** cells demonstrating heterogeneity in the growth/survival factor requirements in various **endothelial** cell populations. Chimeric analysis of adult hematopoietic cell populations, including peripheral platelets and bone marrow **progenitor** cells, revealed that tie(lcz)/tie(lczn-) cells were able to contribute to these cell types in a way indistinguishable from tie(lcz)/+ or wild-type cells. Thus, the primary function of TIE appears to be restricted to the **endothelial** cell lineage.

6/7/12 (Item 7 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08590446 96206025

Endothelial area as a prognostic indicator for invasive breast carcinoma.

Simpson JF; Ahn C; Battifora H; Esteban JM

Department of Pathology, City of Hope National Medical Center, Duarte, California, USA.

Cancer (UNITED STATES) May 15 1996, 77 (10) p2077-85, ISSN 0008-543X Journal Code: CLZ

Languages: ENGLISH

Document type: JOURNAL ARTICLE

BACKGROUND: Vascular enumeration using antibodies to Factor VIII has been reported to be an independent prognostic indicator of invasive breast carcinoma. METHODS: To eliminate potential subjectivity in distinguishing between individual vessels, especially in areas of tangled capillaries, total **endothelial** area (EA) was assessed using a Samba 4000 image analyzer. One hundred seventy-eight invasive breast carcinomas (Stage 1 and 2, mean follow-up: 71 months) were immumostained for the presence of CD34, the human hematopoietic **progenitor** cell antigen also present in endothelium, and EA was quantitated within 5 adjacent 20X fields (0.74 mm2). Additionally, these same vessels were manually counted from the image analyzer. Manual counts were also made from a photomicrograph representative of a single 10X field (1.06 mm2). RESULTS: High grade carcinomas contained greater **endothelial** area than low grade carcinomas (P = 0.0001). **Endothelial** area was prognostically significant (P = 0.004) in univariate analysis of disease-free survival (DFS) and overall survival (OS), as were stage of disease, tumor size, and combined histologic grade (P < or = 0.024). Manual vessel counts from the monitor were significant for OS only. Manual vessel counts from photomicrographs showed no statistically significant association with DFS or OS. In multivariate analysis, EA, but not vessel enumeration, remained as an independent predictor for OS (lymph node negative patients only, n = 87) and for DFS (lymph node positive patients only, n = 91). For the entire group of patients (lymph node negative and lymph node positive) independent predictors of DFS and OS were tumor grade and size (P < or = 0.006). CONCLUSIONS: Of the three methods used to evaluate tumor **angiogenesis**, total **endothelial** area, as objectively evaluated by image analysis, was the only independent prognostic indicator for OS for patients with lymph node negative invasive breast carcinoma.

6/7/13 (Item 8 from file: 154)

DIALOG(R)File 154:MEDLINE(R)

07791818 93208880

High affinity VEGF binding and developmental expression suggest Flk-1 as a major regulator of vasculogenesis and **angiogenesis**.

Millauer B; Wizigmann-Voos S; Schnurch H; Martinez R; Moller NP; Risau W; Ullrich A

Department of Molecular Biology, Max Planck Institute for Biochemistry, Martinsried, Federal Republic of Germany.

Cell (UNITED STATES) Mar 26 1993, 72 (6) p835-46, ISSN 0092-8674 Journal Code: CQ4

Languages: ENGLISH

Document type: JOURNAL ARTICLE

Examination of flk-1 receptor tyrosine kinase mRNA expression by in situ hybridization analysis revealed specific association with **endothelial** cells at all stages of mouse development, including the blood islands in the yolk sac of day 8.5-10.5 embryos, in which the early **progenitors** of this lineage originate. flk-1 transcripts were abundant in proliferating **endothelial** cells of vascular sprouts and branching vessels of embryonic and early postnatal brain, but were drastically reduced in adult brain, where proliferation has ceased. Identification of the angiogenic mitogen, vascular **endothelial** growth factor (VEGF), as the high

affinity ligand of Flk-1 and correlation of the temporal and spatial expression pattern of Flk-1 and VEGF suggest a major role of this ligand-receptor signaling system in vasculogenesis and **angiogenesis**.

6/7/14 (Item 9 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07542369 93263568
[Embryology of vessels]
L'embryologie des vaisseaux.
Dieterlen-Lievre F; Pardanaud L
Institut d'Embryologie Cellulaire et Moleculaire du CNRS, College de France, Nogent-sur-Marne.
Ann Cardiol Angeiol (Paris) (FRANCE) Feb 1993, 42 (2) pA5-12, ISSN 0003-3928 Journal Code: 502
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract
Endothelial emergence is the best known aspect of vessel formation during embryogenesis. It has been analyzed in an avian model of chimeras at the time of organogenesis or morphogenesis. These chimeras involve two species, chick and quail, whose cells may be distinguished on the basis of distinct nuclear heterochromatin patterns or through the use of antibodies that are species and lineage specific. QH1, a monoclonal antibody obtained in our group, whose affinity is restricted to the quail hemangioblastic lineage (**endothelial** and hemopoietic cells), has been a sensitive probe to study the origin of these cells in various chimeric patterns. By **transplanting** organ rudiments or primordial germ layers, we have shown that endothelium emergence in organ rudiments occurs through two different mechanisms, vasculogenesis or in situ differentiation, and **angiogenesis** or colonization by extrinsic precursors. Vasculogenesis occurs in the mesoderm of internal organ rudiments while **angiogenesis** occurs in external rudiments. The conclusion is that associated endoderm exerts a positive influence on the emergence of **endothelial progenitors** from mesodermal precursors.

6/7/15 (Item 10 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07001796 91288073
[Metastatic dissemination of cancer cells]
Dissemination metastatique des cellules cancereuses.
Cornil I; Theodorescu D; Kerbel RS; Poupon MF
Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada.
Pathol Biol (Paris) (FRANCE) Apr 1991, 39 (4) p300-7, ISSN 0369-8114 Journal Code: OSG
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL English Abstract
During the natural history of a tumor, cancer cells become more and more aggressive and their increasing malignancy leads usually to the patient's death. The expression of malignant properties by tumor cells is manifested by the occurrence of metastases and is the result of an overexpression of molecules that are normally or barely non expressed by the normal cell **progenitors** . These molecules can be involved in cell attachment (receptor to the extracellular matrix), in proteolysis (collagenases), in **angiogenesis** (b FGF), in adhesion to **endothelial** cells, in resistance to the immune system. The genetic instability of tumor cells favors the amplification, mutation and gene translocation events, resulting in the activation of some genes or/and oncogenes which might direct the expression of the malignant properties. Finally, metastatic cells have been

shown to have a growth advantage over non metastatic cells, so that metastatic cell population becomes ultimately numerously dominant in the primary tumor. The current knowledge about the malignant cell properties allow us to begin to understand how a cancer cell becomes metastatic and how the metastatic dissemination is usually an ineluctable process. (30 Refs.)

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          160976  ENDOTHELIA?
           46655  PROGENITOR?
          425934  TRANSPLANT?
      S7     106  ENDOTHELIA? AND PROGENITOR? AND TRANSPLANT?
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             106  S7
          141433  PY=1998
      S8       2  S7 AND PY=1998
? rd s8

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 9/3/1     (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)
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09419814   98122771
  Transmigration of CD34+ cells across specialized and nonspecialized endothelium requires prior activation by growth factors and is mediated by PECAM-1 (CD31).
  Yong KL; Watts M; Shaun Thomas N; Sullivan A; Ings S; Linch DC
  Department of Haematology, Royal Free Hospital School of Medicine, London, UK.
  Blood (UNITED STATES) Feb 15 1998, 91 (4) p1196-205, ISSN 0006-4971 Journal Code: A8G
  Languages: ENGLISH
  Document type: JOURNAL ARTICLE


 9/3/2     (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)
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09365035   98082973
  G-protein-coupled receptor of Kaposi's sarcoma-associated herpesvirus is a viral oncogene and angiogenesis activator [see comments]
  Bais C; Santomasso B; Coso O; Arvanitakis L; Raaka EG; Gutkind JS; Asch AS; Cesarman E; Gerhengorn MC; Mesri EA
  Laboratory of Viral Oncogenesis, Division of Hematology-Oncology, Cornell University Medical College, New York, New York 10021, USA.
  Nature (ENGLAND) Jan 1 1998, 391 (6662) p86-9, ISSN 0028-0836 Journal Code: NSC
  Comment in Nature 1998 Jan 1;391(6662):24-5
  Languages: ENGLISH
  Document type: JOURNAL ARTICLE
? s s7 and py=1997

             106  S7
         2584834  PY=1997
     S10      23  S7 AND PY=1997
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? rd s10

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S11 15 RD S10 (unique items)
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11/7/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

14043039 BIOSIS Number: 01043039
AC133, a novel marker for human hematopoietic stem and **progenitor** cells
Yin A H; Miraglia S; Zanjani E D; Almeida-Porada G; Ogawa M; Leary A G; Olweus J; Kearney J; Buck D W
AmCell Corp, 1190 Bordeaux Dr, Sunnyvale, CA 94089, USA
Blood 90 (12). 1997. 5002-5012.
Full Journal Title: Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts Vol. 105 Iss. 003 Ref. 029597
AC133 is one of a new panel of murine hybridoma lines producing monoclonal IgG antibodies (mAbs) to a novel stem cell glycoprotein antigen with a molecular weight of 120 kD. AC133 antigen is selectively expressed on CD34-bright hematopoietic stem and **progenitor** cells (**progenitors**) derived from human fetal liver and bone marrow, and blood. It is not detectable on other blood cells, cultured human umbilical vein **endothelial** cells (HUVECs), fibroblast cell lines, or the myeloid leukemia cell line KG1a by standard flow cytometric procedures. All of the noncommitted CD34+ cell population, as well as the majority of CD34+ cells committed to the granulocytic/monocytic pathway, are stained with AC133 antibody. In vitro clonogenicity assays have demonstrated that the CD34+AC133+ double-positive population from adult bone marrow contains the majority of the CFU-GM, a proportion of the CFU-Mix, and a minor population of BFU-E. The CD34-dim and AC133- population has been shown to contain the remaining **progenitor** cells. AC133-selected cells engraft successfully in a fetal sheep **transplantation** model, and human cells harvested from chimeric fetal sheep bone marrow have been shown to successfully engraft secondary recipients, providing evidence for the long-term repopulating potential of AC133+ cells. A cDNA coding for AC133 antigen has been isolated, which codes for a polypeptide consisting of 865 amino acids (aa) with a predicted size of 97 kD. This antigen is modeled as a 5-transmembrane molecule, a structure that is novel among known cell surface structures. AC133 antibody provides an alternative to CD34 for the selection and characterization of cells necessary for both short- and long-term engraftment, in **transplant** situations, for studies of ex vivo expansion strategies, and for gene therapy.

11/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13725308 BIOSIS Number: 99725308
Effect of synthetic neoglycoproteins on the adhesion of hematopoietic **progenitor** cell lines to human bone marrow **endothelial** cells using a novel 96-well assay
Masek L C; Hardy C L; Sweetenham J W
CRC Wessex Med. Oncol. Unit, Southampton Gen. Hosp., Southampton, UK
Experimental Hematology (Charlottesville) 25 (8). 1997. 746.
Full Journal Title: 26th Annual Meeting of the International Society for

Experimental Hematology, Cannes, France, August 24-28, 1997. Experimental Hematology (Charlottesville)
ISSN: 0301-472X
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 010 Ref. 177418

11/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13677686 BIOSIS Number: 99677686
Ex vivo expansion of primitive murine hematopoietic **progenitor** cells on porcine **endothelial** cells
Davis T A; Lee K P
Immune Cell Biol. Program, Stem Cell Biol. Branch, Building 18, Room 230, Naval Med. Res. Inst., 8901 Wisconsin Ave., Bethesda, MD 20889-5067, USA
Transplantation Proceedings 29 (4). 1997. 2005.
Full Journal Title: Third International Congress of the Cell Transplant Society, Miami, Florida, USA, September 29-October 2, 1996. Transplantation Proceedings
ISSN: 0041-1345
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 009 Ref. 158353

11/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13677685 BIOSIS Number: 99677685
Soluble factor(s) alone produced by primary porcine microvascular **endothelial** cells support the proliferation and differentiation of human CD34+ hematopoietic **progenitor** cells with a high replating potential
Davis T A; Black A T; Lee K P
Immune Cell Biol. Program, Stem Cell Biol. Branch, Building 18, Room 230, Naval Med. Res. Inst., 8901 Wisconsin Ave., Bethesda, MD 20889-5067, USA
Transplantation Proceedings 29 (4). 1997. 2003-2004.
Full Journal Title: Third International Congress of the Cell Transplant Society, Miami, Florida, USA, September 29-October 2, 1996. Transplantation Proceedings
ISSN: 0041-1345
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 009 Ref. 158352

11/7/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13499006 BIOSIS Number: 99499006
Fibronectin increases both non-adherent cells and CFU-GM while collagen increases adherent cells in human normal long-term bone marrow cultures
Hassan H T; Sadovinkova E Yu; Drize N J; Zander A R; Neth R
Bone Marrow Transplantation Cent., Hamburg Univ. Hosp., Eppendorf, Martinistrasse 52, D-20246 Hamburg,GER
Haematologia 28 (2). 1997. 77-84.
Full Journal Title: Haematologia
ISSN: 0017-6559
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 010 Ref. 137844
Normal haematopoietic proliferation and differentiation occur within the human bone marrow microenvironment which is comprised of stromal cells including fibroblasts, adipocytes, macrophages and **endothelial** cells

as well as the extracellular matrix made of collagen, fibronectin, laminin, vitronectin, thrombospondin and haemonectin. All haematopoietic **progenitor** cells including primitive LTC-IC, multilineage CFU-mix, myeloid CFU-GM and erythroid BFU-E adhere to the heparin-binding domains of the extracellular matrix component fibronectin. Human long-term bone marrow cultures (LTHBMC) represent the best available approximation for the in vivo marrow microenvironment in which the proliferation and differentiation of haematopoietic **progenitor** cells depend on the presence of marrow stromal cells and their attendant matrices. Since extracellular matrix components have been shown to promote myelopoiesis in long-term murine bone marrow cultures, we have examined the effect of two main components of the extracellular matrix: fibronectin and collagen type I on myelopoiesis in LTHBMC in an effort to increase the myeloid **progenitor** cell production. The present study revealed different modulatory effects for these two components. Collagen significantly increased the adherent fraction of LTHBMC (p lt 0.05) but always resulted in a decreased myeloid **progenitor** cell (CFU-GM) production throughout the whole 8 weeks of culture. On the other hand, fibronectin significantly increased the number of both non-adherent cells, CFU-GMs (p lt 0.01) and to a lesser extent the number of adherent cells as well as maintaining the LTHBMC up to 14 weeks. Fibronectin has been previously shown to stimulate the development of CFU-GMs in short-term semisolid cultures and to play an active role in haematopoietic **progenitor** cell-microenvironment interactions. Therefore, the presence of fibronectin in LTHBMC could increase both the productivity and longevity of myelopoiesis in the system. The integration of fibronectin in the ex vivo expansion systems currently undergoing development would ensure a sustained effective cumulative production of the myeloid **progenitor** cells (CFU-GMs), and consequently could accelerate the rate of haematological recovery in **transplanted** patients.

11/7/6 (Item 6 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13359925 BIOSIS Number: 99359925
Transendothelial migration of CD34+ and mature hematopoietic cells: An in vitro study using a human bone marrow **endothelial** cell line
Mohle R; Moore M A S; Nachman R L; Rafii S
Lab. Dev. Hematopoiesis, Memorial Sloan-Kettering Cancer Cent., 1275 York Ave., Mailbox 101, New York, NY 10021, USA
Blood 89 (1). 1997. 72-80.
Full Journal Title: Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 004 Ref. 047803
To study the role of bone marrow **endothelial** cells (BMEC) in the regulation of hematopoietic cell trafficking, we have designed an in vitro model of transendothelial migration of hematopoietic **progenitor** cells and their progeny. For these studies, we have taken advantage of a human BMEC-derived cell line (BMEC-1), which proliferates independent of growth factors, is contact inhibited, and expresses adhesion molecules similar to BMEC in vivo. BMEC-1 monolayers were grown to confluency on 3 mu-m microporous membrane inserts and placed in 6-well tissue culture plates. Granulocytecolony stimulating factor (G-CSF)-mobilized peripheral blood CD34+ cells were added to the BMEC-1 monolayer in the upper chamber of the 6-well plate. After 24 hours of coincubation, the majority of CD34+ cells remained nonadherent in the upper chamber, while 1.6 +- 0.3% of the **progenitor** cells had transmigrated. Transmigrated CD34 cells expressed a higher level of CD38 compared with nonmigrating CD34+ cells and may therefore represent predominantly committed **progenitor** cells. Accordingly, the total plating efficiency of the transmigrated CD34+ cells for lineage-committed **progenitors** was higher (14.0 +- 0.1 v 7.8% +- 1.5%). In particular, the plating efficiency of transmigrated cells for erythroid **progenitors** was 27-fold greater compared with nonmigrating

cells (8.0% +- 0.8% v 0.3% +- 0.1%) and 5.5-fold compared with unprocessed CD34+ cells (2.2% +- 0.4%). While no difference in the expression of the beta-1-integrin very late activation antigen (VLA)-4 and beta-2-integrin lymphocyte function-associated antigen (LFA)-1 was found, L-selectin expression on transmigrated CD34+ cells was lost, suggesting that shedding had occurred during migration. The number of transmigrated cells was reduced by blocking antibodies to LFA-1, while L-selectin and VLA-4 antibodies had no inhibitory effect. Continuous coculture of the remaining CD34+ cells in the upper chamber of the transwell inserts resulted in proliferation and differentiation into myeloid and megakaryocytic cells. While the majority of cells in the upper chamber comprised proliferating myeloid precursors such as promyelocytes and myelocytes, only mature monocytes and granulocytes were detected in the lower chamber. In conclusion, BMEC-1 cells support transmigration of hematopoietic **progenitors** and mature hematopoietic cells. Therefore, this model may be used to study mechanisms involved in mobilization and homing of CD34+ cells during peripheral blood **progenitor** cell **transplantation** and trafficking of mature hematopoietic cells.

11/7/7 (Item 7 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13359911 BIOSIS Number: 99359911
Homing and trafficking of hemopoietic **progenitor** cells
Papayannopoulou T; Craddock C
Univ. Washington, Div. Hematology, Box 357710, Seattle, WA 98195-7710, USA
Acta Haematologica (Basel) 97 (1-2). 1997. 97-104.
Full Journal Title: Acta Haematologica (Basel)
ISSN: 0001-5792
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 004 Ref. 047789
Investigations of the homing of **transplanted** hemopoietic cells into preconditioned recipients have in most studies been referable to parameters that determine engraftment. The principles, however, that govern their early traffic into the host's blood and tissues have remained much less explored. Early studies and experiments from our own laboratory suggest that intravenously administered hemopoietic cells, including **progenitors**, are not selectively taken up by bone marrow, as they are distributed widely in several tissues (liver, lung, kidney, spleen, bone marrow). As the hemopoietic cells are later on found almost exclusively in the bone marrow (and spleen in the mouse), the data argue for either preferential retention in these tissues or just only preferential survival and proliferation. Our recent studies showing modulation of cells lodged to the bone marrow, before proliferation ensues (i.e. 3 h after infusion), would favor preferential retainment and/or survival of these cells within the bone marrow. Furthermore we established that the VLA-4/VCAM-1 adhesion pathway plays a significant role in this process, thus defining VCAM-1 as the dominant bone marrow **endothelial** addressin in hemopoietic cell homing. Since homing likely represents a cascade of adhesive interactions between hemopoietic cells and bone marrow stroma and/or its extracellular matrix, other adhesion pathways are likely to be involved and remain to be defined. Finally, our data on mobilization of hemopoietic **progenitors** from normal individuals, induced by blocking the VLA-4/VCAM-1 adhesion pathway, suggest that the molecular pathways involved in homing are also of importance in governing hemopoietic **progenitor** cell trafficking in and out of the bone marrow.

11/7/8 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

10593073 EMBASE No: 98019867
Regulation of hematopoiesis by microvascular endothelium
Rafii S.; Mohle R.; Shapiro F.; Frey B.M.; Moore M.A.S.
S. Rafii, Division of Hematology-Oncology, Cornell University Medical College, 1300 York Avenue, New York, NY 10021 United States
Leukemia and Lymphoma (United Kingdom) , **1997**, 27/5-6 (375-386)
CODEN: LELYE ISSN: 1042-8194
DOCUMENT TYPE: Journal Review
LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH
NUMBER OF REFERENCES: 86
The bone marrow microenvironment is a complex three dimensional structure where hematopoietic stem cells proliferate, mature, migrate into the sinusoidal space, and enter the circulation in an exquisitely regulated fashion. Stromal cells within the BM microenvironment provide a suitable environment for self-renewal, proliferation and differentiation of hematopoietic stem cells. Within the hematopoietic microenvironment, whether it is embryonic yolk sac, fetal liver, or adult bone marrow, microvascular endothelium not only acts as a gatekeeper controlling the trafficking and homing of hematopoietic **progenitors** , but also provides cellular contact and secretes cytokines that allows for the preservation of the steady state hematopoiesis. Recently, homogenous monolayers of bone marrow **endothelial** cells (BMEC) have been isolated and cultivated in tissue culture. Long term coculture studies have shown that BMEC monolayers are unique type of endothelium and can support long-term proliferation of hematopoietic **progenitor** cells particularly megakaryocytic and myeloid **progenitor** cells by constitutive elaboration of lineage-specific cytokines such as G-CSF, GM-CSF, M-CSF, Kit-ligand, IL6, FLK-2 ligand, and leukemia inhibitory factor. Direct cellular contact between hematopoietic **progenitor** cells and BMEC monolayers through specific adhesion molecules including beta1, beta2 integrins and selectins play a critical role in trafficking and possibly proliferation of hematopoietic stem cells. Dysfunction of microvascular **endothelial** cells within the hematopoietic microenvironment may result in stem cell disorders and progression to aplastic anemias, and contribute to graft failure during bone marrow **transplantation** . Further studies on the role of microvascular endothelium in the regulation of hematopoietic stem cell homing and proliferation may enhance our understanding of the pathophysiology of stem cell and leukemic disorders.

11/7/9 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

10574602 EMBASE No: 98001176
Ex vivo expansion of haematopoietic **progenitors** on an **endothelialized** hydroxyapatite matrix
Conrad V.; Bordenave L.; Rouais F.; Baquey Ch.; Dupouy M.; Reiffers J.; Ripoche J.
V. Conrad, INSERM U. 443, Universite Victor Segalen Bordeaux 2, 146 rue Leo Saignat, 33076 Bordeaux Cedex France
Journal of Materials Science: Materials in Medicine (United Kingdom) , **1997**, 8/12 (819-822)
CODEN: JSMME ISSN: 0957-4530
DOCUMENT TYPE: Journal Conference Paper
LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH
NUMBER OF REFERENCES: 15
Autologous haematopoietic **progenitor** cell (HPC) **transplantation%%% is increasingly used to restore haematopoiesis after high-dose chemotherapy treatments. The present study was designed to analyse the ability of hydroxyapatite (HAP) seeded with** endothelial **cells (EC) to support the proliferation and differentiation of CD34+ HPC in static culture conditions. HAP is** endothelializable **as assessed by scanning electron microscopy and time-course DNA synthesis analysis using tritiated**

thymidine incorporated in EC isolated from human umbilical vein cord. Short-term coculture experiments in which CD34+ cells isolated from human cord blood were seeded on endothelialized HAP, were performed. Results show that endothelialized HAP is permissive to CD34+ cell expansion with a maximum expansion obtained between days 7 and 14 of coculture in the presence of IL-1 and IL-3 when compared with other experiments omitting either EC or interleukins. From morphological analyses, the expanded cell population mainly belonged to the myelocytic lineage with 33% mature cells (polymorphonuclear neutrophils and monocytes) at day 14 of coculture. The immature HPC could remain trapped within HAP while giving rise to a more mature progeny that exit from HAP microenvironment.

11/7/10 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08978576 97236934
Vessel patterning in the embryo of the zebrafish: guidance by notochord.
Fouquet B; Weinstein BM; Serluca FC; Fishman MC
Cardiovascular Research Center, Massachusetts General Hospital, Charlestown 02129, USA.
Dev Biol (UNITED STATES) Mar 1 1997, 183 (1) p37-48, ISSN 0012-1606 Journal Code: E7T
Contract/Grant No.: RO1-HL49579, HL, NHLBI; T32-HL07208, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE
We have cloned the zebrafish homolog of the receptor tyrosine kinase flk-1 to provide us with a tool to study normal vascular pattern formation in the developing zebrafish embryo and to compare it to mutants in which vascular pattern is perturbed. We find that during normal development the first angioblasts arise laterally in the mesoderm and then migrate medially to form the primordia of the large axial vessels, the dorsal aorta (axial artery) and the axial vein. Lumen formation occurs shortly before onset of circulation at 24 hr postfertilization. We examined the specification of vascular progenitors in the mutant cloche, which fails to form both vessels and blood. cloche lacks all flk-expressing cells and therefore appears to lack angioblasts. The axial vessels of the trunk form in close proximity to notochord and endoderm, which may provide cues for their formation. The dorsal aorta is normally just ventral to the notochord; the axial vein is just below the dorsal aorta and above the endoderm. floating head (flh) and no tail (ntl) mutants both have defects in the formation of notochord. Both are cell-autonomous lesions, flh abolishing notochord and ntl preventing its differentiation. In both mutants the dorsal aorta fails to form, while formation of the axial vein is less affected. Mosaic analysis of mutant embryos shows that transplanted wild-type cells can become notochord in mutant flh embryos. In these mosaic embryos flh cells expressing flk assemble at the midline, beneath the wild-type notochord, and form an aortic primordium. This suggests that signals from the notochord may guide angioblasts in the fashioning of the dorsal aorta. The notochord seems to be less important for the formation of the vein.

11/7/11 (Item 1 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

127120691 CA: 127(9)120691p DISSERTATION
Human cytomegalovirus infection in human umbilical vein endothelial cells; human cytomegalovirus infection in hematopoietic progenitor cells: model of HCMV latency (transplantation)
AUTHOR(S): Zhuravskya, Tatiana
LOCATION: Univ. of Nevada, Reno, NV, USA
DATE: 1997 PAGES: 113 pp. CODEN: DABBBA LANGUAGE: English CITATION:

Diss. Abstr. Int., B 1997, 58(3), 1204 AVAIL: UMI, Order No. DA9728126
SECTION:
CA215010 Immunochemistry
CA214XXX Mammalian Pathological Biochemistry
IDENTIFIERS: human cytomegalovirus infection latency model transplantation, vein endothelium human cytomegalovirus latency transplantation, hematopoietic progenitor cell human cytomegalovirus latency
DESCRIPTORS:
Vein...
endothelium; umbilical vein endothelium and hematopoietic progenitor cell models of human cytomegalovirus latency
Hematopoietic precursor cell... Human herpesvirus 5... Viral infection...
umbilical vein endothelium and hematopoietic progenitor cell models of human cytomegalovirus latency
Transplant(organ)...
umbilical vein endothelium model of human cytomegalovirus latency in
Vascular endothelium...
vein; umbilical vein endothelium and hematopoietic progenitor cell models of human cytomegalovirus latency

11/7/12 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI

010663410
WPI Acc No: 96-160364/199616
Mammalian cells expressing thrombomodulin under activating conditions - useful for gene therapy, for transplantation and for treating inflammatory or thrombotic conditions
Patent Assignee: NEW ENGLAND DEACONESS HOSPITAL (NEWE-N); SANDOZ LTD (SANO); BETH ISRAEL DEACONESS MEDICAL CENT (BETH-N); NOVARTIS AG (NOVS)
Inventor: BACH F H; WRIGHTON C
Number of Countries: 065 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9606933	A1	19960307	WO 95EP3379	A	19950825	C12N-015/12	199616 B
AU 9535186	A	19960322	AU 9535186	A	19950825	C12N-015/12	199626
EP 781333	A1	19970702	EP 95931935	A	19950825	C12N-015/12	199731
			WO 95EP3379	A	19950825		

Priority Applications (No Type Date): US 94296945 A 19940826
Cited Patents: 6.Jnl.Ref; WO 9006997; WO 9207573; WO 9318794; WO 9427612; WO 9500654; WO 9527512
Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
WO 9606933	A1	E	44			
Designated States (National): AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TT UA UG US UZ VN						
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG						
AU 9535186	A			Based on		WO 9606933
EP 781333	A1	E		Based on		WO 9606933
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE						

Abstract (Basic): WO 9606933 A
The following are new: (A) method of genetically modifying mammalian cells to render them less susceptible to an inflammatory or immunological stimulus comprises inserting DNA encoding a functional thrombomodulin (TM) protein under control of a suitable promoter (P) in the cells or their progenitors, TM being expressed from these cells under endothelial cellular activating conditions; (B) a

retroviral construct comprising: (a) a 5' -long terminal repeat (LTR) of a retrovirus; (b) a retroviral packaging signal downstream from the 5'-LTR; (c) DNA encoding TM in operative association with the Herpes simplex thymidine kinase promoter downstream from the 5'-LTR; and (d) a 3' -LTR; (C) graftable mammalian endothelial cells, tissues or organs comprising DNA encoding TM under control of a constitutive, regulatable and/or inducible promoter; and (D) a non-human transgenic mammal contg. DNA encoding TM from a different species (esp. a transgenic pig or mouse able to encode human TM).

USE - The method can be used to render endothelial cells less susceptible to an inflammatory or immunological stimulus. Particular applications are in transplantation, in gene therapy to inhibit thrombosis and to alleviate autoimmune diseases such as multiple sclerosis.

ADVANTAGE - Rendering cells and organs destined for transplantation less susceptible to thrombogenicity will prolong organ transplant survival, while minimising the toxicity and other adverse side effects associated with large doses of immunosuppressants, which are presently in use.

Dwg.0/10

Derwent Class: B04; D16; P14
International Patent Class (Main): C12N-015/12
International Patent Class (Additional): A01K-067/027; A61K-048/00; C12N-005/10; C12N-015/86

11/7/13 (Item 2 from file: 351)
DIALOG(R)File 351:DERWENT WPI

010277389 **Image available**
WPI Acc No: 95-178644/199523

In vitro amplification of stem cells in high yield - by culture in presence of endothelial cells and cytokine(s), useful in bone marrow transplantation, blood transfusion and gene therapy

Patent Assignee: US SEC OF NAVY (USNA)
Inventor: DAVIS T A; KESSLER S; ROBINSON D H
Number of Countries: 025 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9511692	A1	19950504	WO 94US12385	A	19941027	A61K-038/00	199523 B
AU 9481280	A	19950522	AU 9481280	A	19941027	A61K-038/00	199534
US 5599703	A	19970204	US 93142569	A	19931028	C12N-005/00	199711
EP 812201	A1	19971217	WO 94US12385	A	19941027	A61K-038/00	199804
			EP 95900461	A	19941027		

Priority Applications (No Type Date): US 93142569 A 19931028
Cited Patents: 8.Jnl.Ref; US 4714680; US 5004681; US 5061620; US 5192553
Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
WO 9511692	A1	E	48			
Designated States (National): AU BR CA JP NO NZ RU						
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE						
AU 9481280	A			Based on		WO 9511692
US 5599703	A		24			
EP 812201	A1	E		Based on		WO 9511692
Designated States (Regional): BE CH DE GB LI SE						

Abstract (Basic): WO 9511692 A

Stem cells (SC) are amplified in vitro by: (1) isolating SC from blood or bone marrow; (2) contacting them with endothelial cells (EC) and (3) culturing the cells together in presence of at least one cytokine (I) to support SC amplification. Also new is a process for engrafting SC in humans that also includes (4) isolating amplified SC

from the mixed culture and (5) infusing them into a human.
USE - The amplified SC are useful in bone marrow transplantation, blood transfusion and gene therapy. They can also be used in tests eg to determine optimal culture conditions or the haematopoietic reconstitution potential of cells.
ADVANTAGE - Culture in presence of EC and (I) provides rapid amplification and increased yield of SC, and particular (I) may result in commitment of SC to particular marrow elements, e.g. granulocytes or platelets. The method can be used on a large scale (in bioreactors), eg 1.5x107 cfu GM progenitor cells can be produced in 14 days from 1-2 million CD34 positive SC (requiring only 15 ml of bone marrow aspirate).
Dwg.1/11

Abstract (Equivalent): US 5599703 A
A method of expanding human bone marrow CD34+ stem and progenitor cells, including primitive stem cells, in vitro comprising the steps of:
i) isolating the CD34+ stem and progenitor cells from human bone marrow;
ii) contacting the isolated CD34+ stem and progenitor cells with porcine microvascular brain endothelial cells; and
iii) co-culturing the contacted CD34+ stem and progenitor cells and endothelial cells in the presence of at least one cytokine in an amount sufficient to support amplification/expansion of said CD34+ stem and progenitor cells.
Dwg.0/9

Derwent Class: B04; D16
International Patent Class (Main): A61K-038/00; C12N-005/00
International Patent Class (Additional): A01N-063/00; A01N-065/00

11/7/14 (Item 3 from file: 351)
DIALOG(R)File 351:DERWENT WPI

010150818
WPI Acc No: 95-052070/199507
Serum-depleted or serum-free culture medium for long-term cell growth - contg. albumin, transferrin, nucleoside(s), growth factor, extracellular matrix material, pyruvate, cholesterol, standard medium etc.
Patent Assignee: AMGEN INC (AMGE-N)
Inventor: PONTING I L O
Number of Countries: 048 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9500632	A1	19950105	WO 94US6893	A	19940617	C12N-005/06	199507 B
US 5405772	A	19950411	US 9379719	A	19930618	C12N-005/00	199520
AU 9471124	A	19950117	AU 9471124	A	19940617		199521
EP 703978	A1	19960403	EP 94920264	A	19940617	C12N-005/06	199618
			WO 94US6893	A	19940617		
JP 8508891	W	19960924	WO 94US6893	A	19940617	C12N-005/06	199704
			JP 95502993	A	19940617		
AU 678836	B	19970612	AU 9471124	A	19940617	C12N-005/06	199732

Priority Applications (No Type Date): US 9379719 A 19930618
Cited Patents: 1.Jnl.Ref; WO 9218615; WO 9309220
Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
WO 9500632	A1	E	60			

Designated States (National): AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB HU JP KP KR KZ LK LV MG MN MW NL NO NZ PL PT RO RU SD SE SK UA UZ VN
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE

US 5405772	A	22		
AU 9471124	A		Based on	WO 9500632

EP 703978 A1 E Based on WO 9500632
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
JP 8508891 W 52 Based on WO 9500632
AU 678836 B Previous Publ. AU 9471124
Based on WO 9500632

Abstract (Basic): WO 9500632 A

A serum-depleted or serum-free medium for the long-term proliferation and development of cells comprises (a) a standard culture medium, (b) serum albumin, (c) transferrin, (d) a source of lipids and fatty acids, (e) cholesterol, (f) a reducing agent, (g) pyruvate, (h) nucleosides for synthesis of DNA and RNA, (i) at least one growth factor that stimulates the proliferation and development of stromal cells, tissue cells or organ cells, and (j) at least one extracellular matrix (ECM) material.

USE - The medium can be used for both short and long-term maintenance of proliferation and development of cells, including fibroblasts, glial cells, neuronal cells, adipocytes, myoblasts, epithelial cells, hepatocytes, osteoclasts, heart muscle cells and lymphopoietic cells, and partic. haematopoietic cells. The medium can be used to stimulate the proliferation and/or development of early progenitor cells for bone marrow transplants and/or gene transfer into these cells for gene therapy for treating immunological or haematological disorders, e.g. severe combined immunodeficiency, adenosine deaminase deficiency and AIDS. The medium can also be used to determine the function of a novel gene by adding an anti-sense oligomer to inhibit expression.

ADVANTAGE - The chemically defined medium can provide growth of primal cells as well as immortalised cell lines and development for up to several months. The medium allows the growth of hemopoietic cells and the stromal cells that support them.

Dwg.0/7

Abstract (Equivalent): US 5405772 A

Medium for long-term proliferation and development of cells comprises (a) 0.8-1.09 times standard culture medium; (b) 3-50 mg per ml serum albumin; (c) 25-1000 micro-g/ml transferrin; (d) 5-100 micro-g/ml lipids and fatty acids; (e) 3-30 micro-g/mol cholesterol; (f) 30-300 microM reducing agent; (g) 30-500 micro-g/ml pyruvate; (h) 5-30 micro-g/ml nucleosides; (i) growth factor; and (j) extracellular matrix material(s).

Cpd. (i) comprises 5-200 ng per mol. epidermal growth factor, 0.5-40 ng per ml fibroblast growth factor, 2-200 ng/ml platelet-derived growth factor, and/or 2-100 micro-g/ml insulin. Cpd. (j) comprises 2-100 micro-g/cm2 collagen IV and/or 0.5-100 micro-g/cm2 fibronectin.

USE - Used for culturing adipocytes, macrophages, endothelial cells, fibroblasts and haematopoietic progenitor cells.

Dwg.0/8

Derwent Class: B04; D16
International Patent Class (Main): C12N-005/00; C12N-005/06
International Patent Class (Additional): C12N-005/08; C12N-005/06; C12R-001-91

11/7/15 (Item 4 from file: 351)
DIALOG(R)File 351:DERWENT WPI

010121204 **Image available**
WPI Acc No: 95-022455/199503
Inducing immune tolerance to xenografts using surrogates - injected, while immunologically deficient, with donor lymphocytic progenitor cells to develop cell population contg. immunosuppressive components
Patent Assignee: UNIV JOHNS HOPKINS (UYJO); XIMEREX INC (XIME-N)
Inventor: BESCHORNER W E

Number of Countries: 054 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9427622	A1	19941208	WO 94US5844	A	19940524	B	199503 B
AU 9470445	A	19941220	AU 9470445	A	19940524	B	199512
			WO 94US5844	A	19940524		
EP 700297	A1	19960313	EP 94919227	A	19940524	B	199615
			WO 94US5844	A	19940524		
JP 9500618	W	19970121	WO 94US5844	A	19940524	B	199713
			JP 95500907	A	19940524		
EP 700297	A4	19970409	EP 94919227	A	19940000	B	199735

Priority Applications (No Type Date): US 9365370 A 19930524
Cited Patents: 05Jnl.Ref; WO 9309234
Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
WO 9427622	A1	E	100			
Designated States (National): AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP KG KP KR KZ LK LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA US UZ VN						
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE						
AU 9470445	A			Based on		WO 9427622
EP 700297	A1	E		Based on		WO 9427622
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE						
JP 9500618	W		87	Based on		WO 9427622

Abstract (Basic): WO 9427622 A

Xenograft transplant of an organ in which the recipient is made immunotolerant to donor tissue comprises: (i) collecting from the recipient a cell population contg. lymphocytic progenitors but a reduced number of cells that are specifically cytotoxic to tissue from a surrogate animal; (ii) admin. of these cells to an immune deficient surrogate; (iii) allowing immune competence to develop in the surrogate; (iv) collecting from the surrogate a second cell population (SCP) contg. immunosuppressive components that specifically suppress immune response of recipient to donor tissue; (v) infusing the SCP into the recipient and (vi) transplanting an organ from a donor that is antigenically identical to the surrogate. Also claimed are: (A) transplanting an organ from a donor to a non-syngeneic recipient comprising: (i) admin. to the recipient of a SCP as above; or (i') admin. of a cell population contg. immunosuppressor moieties specifically suppressing immune response of the recipient to the donor obtd. from a surrogate animal, where the surrogate animal is chimeric and contains lymphocytes derived from a set of animals; and (ii) transplanting the organ so that immune response to it is reduced; (B) prepn. of an excised organ for transplant into a non-syngeneic recipient comprising: (i) collecting a cell population contg. lymphocytic progenitor cells from an animal of the same species; (ii) admin. the cell population to a surrogate animal in a state of immune deficiency, (iii) developing a state of immune competence in the surrogate; (iv) excising an organ which is populated with at least a plurality of cells derived from the recipient animal; an (v) placing the organ i a preservative perfusion solution ready for transplant; (C) prepn. of an immune suppressive compsn. for suppression of immune rejection by the non-syngeneic recipient comprising: (i) admin. of lymphocytes derived from a set of animals of the same species having a plurality of tissue types to a surrogate animal that is in a state of immune deficiency; (ii) developing a state of immune competence in the surrogate; (iii) collecting from the surrogate a SCP which contain immunosuppressive moieties which suppress immune response of the recipient to the tissue of the donor; and (iv) placing the immunosuppressive moieties from the SCP in a compsn. suitable for injection into the recipient; (D) kit for suppressing

immune response consisting of a cell population as that in (A) suitable for injection into a recipient; and (E) a kit for organ transplant into a recipient comprising an excised organ and a preservative perfusion soln. (from a species different from the recipient) plus perfusion soln., many of the cells (endothelial, monocyte, dendritic and lymphoid) in the organ being from the same species on the recipient.

USE - The method can be used for (1) skin grafts on humans with severe burns; (2) transplanting pancreatic islet or hepatic cells (the latter can be admin. periodically to patients with fulminant hepatitis as long as necrosis continues) and (3) transplanting bone marrow (claimed).

ADVANTAGE - Since the organ being transplanted may be populated with donor cells, the risk of transplantation rejection is reduced, and the need for immune suppression less. The second cell population provides antigen-specific tolerance.

(Dwg.1/8

Derwent Class: B04; D16
International Patent Class (Main): A61K-035/00; A61K-035/12
International Patent Class (Additional): C12N-005/00; C12N-005/06

=> s cd34

L7 166 CD34

=> s l7 and (angiogenesis or ischemi?)

835 ANGIOGENESIS
6162 ISCHEMI?

L8 7 L7 AND (ANGIOGENESIS OR ISCHEMI?)

=> d l8 1-7

1. 5,707,624, Jan. 13, 1998, Treatment of Kaposi's sarcoma by inhibition of scatter factor; Brian J. Nickoloff, et al., 424/158.1, 143.1, 145.1, 152.1 [IMAGE AVAILABLE]

2. 5,660,827, Aug. 26, 1997, Antibodies that bind to endoglin; Philip E. Thorpe, et al., 424/152.1, 130.1, 138.1, 141.1; 530/387.1, 388.1 [IMAGE AVAILABLE]

3. 5,645,986, Jul. 8, 1997, Therapy and diagnosis of conditions related to telomere length and/or telomerase activity; Michael D. West, et al., 435/6, 91.2, 183, 184, 194; 436/63; 536/24.31, 24.33 [IMAGE AVAILABLE]

4. 5,618,534, Apr. 8, 1997, Isolated antigen endo glyx-1; Maria P. Sanz-Moncasi, et al., 424/184.1; 530/350 [IMAGE AVAILABLE]

5. 5,612,211, Mar. 18, 1997, Stimulation, production and culturing of hematopoietic progenitor cells by fibroblast growth factors; Elaine L. Wilson, et al., 435/378; 424/577; 435/325, 377, 384; 514/2, 12; 530/324, 351, 399 [IMAGE AVAILABLE]

6. 5,612,034, Mar. 18, 1997, Super-globuling for in vivo extended lifetimes; Philippe Pouletty, et al., 424/184.1, 193.1; 514/1; 530/326, 327, 328, 402 [IMAGE AVAILABLE]

7. 5,536,641, Jul. 16, 1996, Monoclonal antibody specific for vascular endothelial cell antigen endoglyx-1 and uses thereof for detection of, and isolation of, vascular endothelial cells; Maria P. Sanz-Moncasi, et al., 435/7.21, 7.23, 70.21, 172.2, 261, 332; 530/388.2, 388.22 [IMAGE AVAILABLE]

=> d l8 1-7 date

L8: 1 of 7

TITLE:	Treatment of Kaposi's sarcoma by inhibition of scatter factor		
US PAT NO:	5,707,624 [IMAGE AVAILABLE]	DATE ISSUED:	Jan. 13, 1998
APPL-NO:	08/253,728	DATE FILED:	Jun. 3, 1994

L8: 2 of 7

TITLE:	Antibodies that bind to endoglin		
US PAT NO:	5,660,827	DATE ISSUED:	Aug. 26, 1997

[IMAGE AVAILABLE]
APPL-NO: 08/457,229 DATE FILED: Jun. 1, 1995
REL-US-DATA: Division of Ser. No. 350,212, Dec. 5, 1994, which is a continuation-in-part of Ser. No. 205,330, Mar. 2, 1994, which is a continuation-in-part of Ser. No. 295,868, Sep. 6, 1994, which is a continuation-in-part of Ser. No. 846,349, Mar. 5, 1992, abandoned.

L8: 3 of 7

TITLE: Therapy and diagnosis of conditions related to telomere length and/or telomerase activity
US PAT NO: 5,645,986 DATE ISSUED: Jul. 8, 1997
[IMAGE AVAILABLE]
APPL-NO: 08/153,051 DATE FILED: Nov. 12, 1993
REL-US-DATA: Continuation-in-part of Ser. No. 60,952, May 13, 1993, which is a continuation-in-part of Ser. No. 38,766, Mar. 24, 1993, Pat. No. 5,489,508, which is a continuation-in-part of Ser. No. 882,438, May 13, 1992, abandoned.

L8: 4 of 7

TITLE: Isolated antigen endo glyx-1
US PAT NO: 5,618,534 DATE ISSUED: Apr. 8, 1997
[IMAGE AVAILABLE]
APPL-NO: 08/535,491 DATE FILED: Sep. 28, 1995
REL-US-DATA: Division of Ser. No. 243,288, May 17, 1994.

L8: 5 of 7

TITLE: Stimulation, production and culturing of hematopoietic progenitor cells by fibroblast growth factors
US PAT NO: 5,612,211 DATE ISSUED: Mar. 18, 1997
[IMAGE AVAILABLE]
APPL-NO: 08/076,875 DATE FILED: Jun. 15, 1993
REL-US-DATA: Continuation-in-part of Ser. No. 950,549, Sep. 25, 1992, abandoned, which is a continuation-in-part of Ser. No. 536,108, Jun. 8, 1990, abandoned.

L8: 6 of 7

TITLE: Super-globuling for in vivo extended lifetimes
US PAT NO: 5,612,034 DATE ISSUED: Mar. 18, 1997
[IMAGE AVAILABLE]
APPL-NO: 08/237,346 DATE FILED: May 3, 1994
REL-US-DATA: Continuation-in-part of Ser. No. 137,821, Oct. 15, 1993, which is a continuation-in-part of Ser. No. 70,092, May 27, 1993, which is a continuation-in-part of Ser. No. 592,214, Oct. 3, 1990.

L8: 7 of 7

TITLE: Monoclonal antibody specific for vascular endothelial cell antigen endoglyx-1 and uses thereof for detection of, and isolation of, vascular endothelial cells
US PAT NO: 5,536,641 DATE ISSUED: Jul. 16, 1996
[IMAGE AVAILABLE]
APPL-NO: 08/243,288 DATE FILED: May 17, 1994

=> d l8 1-7 kwic

US PAT NO: 5,707,624 [IMAGE AVAILABLE] L8: 1 of 7

SUMMARY:

BSUM(7)

A . . . Pathol. 139-1251-1258 (1991)). Endothelium, dendrocytes, and

KS tumor cells in vivo share a number of immunophenotypic features, including expression of CD34 (human progenitor cell antigen), vascular cell adhesion molecule-1 (VCAM-1), and CD31 (platelet endothelial cell adhesion molecule-1) (Nickoloff, B. J., Arch.. . .

DETDESC:

DETD(6)

It . . . important role in the pathogenesis of the disease. It should also be recognized, therefore, that in HIV-induced diseases characterized by angiogenesis and where SF is a contributing factor to the angiogenesis, the present methods of the invention may also be applied.

DETDESC:

DETD(21)

Rat Cornea Angiogenesis Assay. Neovascularization was assayed in the avascular cornea of the rat eye, as described by Polverini et al. (Polverini, P.. . . for 7 days. Responses were scored after carbon perfusion as positive only when sustained ingrowth of new vessels was present. Angiogenesis inhibition studies were performed using both chicken and rabbit antibodies against SF.

DETDESC:

DETD(39)

Endothelial . . . and relevant positive/negative control cytokines was investigated and the results are summarized below in Table 1, which show inhibition of angiogenesis induced by KSGM using anti-SF antibodies. The rat corneal neovascularization assay was used to assess the pro-angiogenic properties of KSGM. . . Both positive and negative controls were performed, and both chicken and rabbit anti-SF antibodies could effectively reduce the majority of angiogenesis induced by KSGM.

DETDESC:

DETD(41)

Compared to known angiogenic cytokines such as bFGF and HGF, KSGM HTLV-II CM was highly angiogenic in the rat cornea angiogenesis assay (Polverini, P. J. et al., Lab. Invest. 51:635-642 (1984)), with 4 out of 4 strongly positive corneal neovascular responses.. . . C.), and reduced by 60% using the chicken antibody to SF. Both anti-SF antibodies could neutralize recombinant human HGF induced angiogenesis, and did not cross-react with bFGF. These findings are consistent with a previous study demonstrating that SF is a potent. . .

DETDESC:

DETD(45)

Large . . . in great part, to SF. The present invention further demonstrates that HTLV-II CM is highly angiogenic in the rat cornea angiogenesis assay and that SF is responsible for most of the angiogenic activity.

DETDESC:

DETD(71)

US PAT NO: 5,660,827 [IMAGE AVAILABLE] L8: 2 of 7

SUMMARY:

BSUM(42)

In . . . laborious enumeration of capillaries labelled with pan-endothelial cell markers or the use of complex and subjective in vivo assays of angiogenesis. Indeed, studies are disclosed herein which indicate that TEC-4 and TEC-11 can distinguish between intraductal carcinoma in situ (CIS), an. . .

DETDESC:

DETD(302)

A . . . of 35-45. ECV-304 cells also displayed diminished expression of several other endothelial cell markers, including EN4 antigen, angiotensin-converting enzyme and CD34. Endothelial cells of bovine, murine and chinese hamster origin displayed no detectable reactivity with either TEC-4 or TEC-11 antibodies. U937. . .

DETDESC:

DETD(336)

An . . . vascular proliferation (Garcia et al., 1990; Fujihara, 1991). By contrast, endoglin levels in reactive hyperplasia, which is not associated with angiogenesis (Jones et al., 1984), were not higher than in normal lymph nodes. Increased endoglin expression by vascular endothelial cells has also been reported in angiogenesis-dependent chronic inflammatory skin lesions, such as psoriasis, dermatitis and granulation tissue, and on one case of cutaneous malignant melanoma (Westphal. . .

DETDESC:

DETD(340)

Upregulation . . . endoglin on vascular endothelial cells in solid tumors and chronic inflammatory disorders might be involved functionally in the regulation of angiogenesis in these pathological conditions. Recent evidence indicates that endoglin is an essential component of the TGF-.beta. (transforming growth factor-.beta.) receptor. . .

DETDESC:

DETD(342)

The . . . 1992; Horak et al., 1992; Bigler et al., 1993) or the use of complex and subjective in vivo assays of angiogenesis (Chodak et al., 1980), both of which might be supplanted by a simple immunohistochemical procedure employing TEC-4 or TEC-11. Indeed,. . .

DETDESC:

DETD(479)
Herbin and Gross, "Binding sites for bFGF on solid tumors are associated with the vasculature," In Angiogenesis: Key Principles, R-Steiner, P. Weiss & R. Langer, eds. Birkamser Verlag, Basel, Switzerland, 1992.

US PAT NO: 5,645,986 [IMAGE AVAILABLE] L8: 3 of 7

DETDESC:

DETD(29)

The . . . degenerative changes occur in association with the RPE layer. The healthy retina is avascular. The RPE secretes factors that inhibit angiogenesis. The RPE also secretes factors that effect the differentiative function of the retinal neurons. RPE cells can be taken from. . .

DETDESC:

DETD(347)

Examples of some of these applications include our detection of telomerase in CD34.sup.+ hematopoietic stem cells, and the detection of a weak telomerase activity in total peripheral blood leukocytes which apparently reflects the. . .

US PAT NO: 5,618,534 [IMAGE AVAILABLE] L8: 4 of 7

SUMMARY:

BSUM(6)

However, . . . al., J. Histochem. Cytochem. 34: 209-214 (1986). For example, FVIIIRA is present in megakaryocytes and platelets, and CD31, CD36, and CD34 are expressed by subsets of lymphocytes and myelomonocytic cells. Similarly, BW200 is expressed in mesothelium and glomerular epithelium, PAL-E is. . .

DETDESC:

DETD(42)

Normal . . . an amount of the monoclonal antibodies of the invention sufficient to inhibit proliferation of the endothelial cells targeted, thereby preventing angiogenesis in lesional tissue, as well as sparing other proliferating cells, such as bone marrow, which do not express the targeted. . .

US PAT NO: 5,612,211 [IMAGE AVAILABLE] L8: 5 of 7

SUMMARY:

BSUM(33)

FGF has been used for the treatment of ischemic heart disease (U.S. Pat. Nos. 4,296,100 and 4,378,347 to Franco), where it was found to increase blood flow in the. . .

SUMMARY:

BSUM(76)

FIG. 17A-B is a graphical representation of the response of CD34.sup.+ progenitor cells to bFGF, SCF and GM-CSF alone and in combination (17A=7d., 17B=14d.).

DETDESC:

DETD(109)

Recombinant . . . were performed on the day of use. Rabbit IgG was used as a source of irrelevant antibody. An FITC conjugated anti-CD34

antibody, HPCA-1, was purchased from Becton Dickinson (San Jose, Calif.). Human gamma globulin was obtained from Miles Inc./Cutter Biological (Elkart,. . .

DETDESC:

DETD(112)

CD34 enriched cell populations were prepared as follows. Mononuclear cells were washed twice in PBS and resuspended in IMDM. Subsequently, cells. . . described (Lebkowski J. S., Schain L. R., Okrongly D., Levinsky R., Harvey M., Okarma T. B. Rapid isolation of human CD34 hematopoietic stem cells: purging of human tumor cells. Transplantation (in press) September-October, 1992).

DETDESC:

DETD(113)

After . . . and incubated for 15 minutes at room temperature. Cell suspensions were subsequently transferred to AIS MicrCELLector T-25 flasks coated with anti-CD34 antibodies (Applied Immune Sciences, Menlo Park, Calif.).

DETDESC:

DETD(114)

Nonadherent . . . adherent cells removed by manual agitation of the flasks. The final cell population was found to be 70-97% positive for CD34, as analyzed by flow cytometry utilizing an FITC conjugated anti-CD34 antibody, HPCA-1. Morphologically, these cells were greater than 90% blasts.

DETDESC:

DETD(116)

Low density or CD34+ cells were cultured in 35 mm tissue culture dishes (Corning, Corning N.J.) at 10 or 5.times.10 cells/ml McCoy's modified assay. . .

DETDESC:

DETD(122)

The . . . progenitor cell growth was observed when GM-CSF supported cultures were incubated with irrelevant IgG (Table 3). Neutralizing antibody added to CD34 enriched cells failed to augment GM-CSF mediated progenitor cell growth suggesting that the FCS did not contribute significantly to biologically. . .

DETDESC:

DETD(130)

The ability of bFGF to partially abrogate the inhibitory effect of TGF-Beta 1 was also noted in three separate experiments when CD34 enriched cells were cultured in a CFU-GM assay. As demonstrated in this representative experiment (Table 4), bFGF significantly abrogated TGF-beta. . .

DETDESC:

DETD(131)

TABLE 4

Partial abrogation of TGF-beta 1 mediated suppression of progenitor cell growth by bFGF utilizing CD34 enriched bone marrow cells

GROWTH FACTOR	DAY 7*	DAY 14*
None	0	
bFGF 100 ng/ml	0	0
GM-CSF 20. . .		
TGFB 5 ng		

*total CFGGM .+-. standard deviation of eight individual culture dishes scored (5 .times. 10.sup.3 CD34+ cells/dish)
.sup.a p <0.003 for day 7 and p <0.0001 for day 14. P values were calculated comparing. . .

DETDESC:

DETD(136)

FGFs . . . GM-CSF stimulated cluster formation, a direct action of bFGF on the progenitor cell is expected, and single cell experiments utilizing CD34+Lin- cells will confirm that the effects of bFGF are directly mediated on the progenitor or require the presence of specific. . .

DETDESC:

DETD(139)

CULTURED MONONUCLEAR AND CD34.sup.+ CELLS HAVING SYNERGISTIC GROWTH EFFECTS IN THE PRESENCE OF FGF AND OTHER STIMULATING GROWTH FACTORS

DETDESC:

DETD(140)

Mononuclear and CD34.sup.+ cells were cultured according to the above Examples.

DETDESC:

DETD(142)

FIGWS. 17A-17B are is a graphical representation of the response of CD34.sup.+ progenitor cells to bFGF, SCF and GM-CSF alone and in combination. The data represent the mean number of day 7 and day 14 clusters and colonies.+-.standard deviation of four separate experiments. In these experiments eight plates, seeded with 5.times.10.sup.3 CD34.sup.+ cells were scored for colony and cluster growth on day 7 and day 14 of culture.

US PAT NO: 5,612,034 [IMAGE AVAILABLE] L8: 6 of 7

SUMMARY:

BSUM(36)

The . . . leukocytes such as neutrophils, basophils, NK cells, eosinophils, or allo- or xeno-reactive leukocytes, etc. (inflammation, anaphylaxis), stem cells such as CD34+ cells (polycythemia), malignant cells (malignancies; CALLA) or infected cells, particularly HIV infected host cells, or the like.

SUMMARY:

BSUM(37)

Host . . . anti-allergen IgE, auto- or allo-antibodies for autoimmunity or allo- or xenoimmunity, Ig Fc receptors or Fc receptor binding factors, erythropoietin, angiogenesis factors, adhesion molecules, MIF, MAF, complement factors, PAF aceter, ions such as calcium, potassium, magnesium, aluminum, iron, etc, enzymes such. . .

US PAT NO: 5,536,641 [IMAGE AVAILABLE] L8: 7 of 7

SUMMARY:

BSUM(6)

However, . . . et al., J. Histochem. Cytochem. 34:209-214 (1986). For example, FVIIIRA is present in megakaryocytes and platelets, and CD31, CD36, and CD34 are expressed by subsets of lymphocytes and myelomonocytic cells. Similarly, BW200 is expressed in mesothelium and glomerular epithelium, PAL-E is. . .

DETDESC:

DETD(42)

Normal . . . an amount of the monoclonal antibodies of the invention sufficient to inhibit proliferation of the endothelial cells targeted, thereby preventing angiogenesis in lesional tissue, as well as sparing other proliferating cells, such as bone marrow, which do not express the targeted. . .

=> s marrow(P)transplant? and (angiogenesis or endotheli? or ischemi?)

```
          5583 MARROW
         12555 TRANSPLANT?
          1492 MARROW(P)TRANSPLANT?
           835 ANGIOGENESIS
          5995 ENDOTHELI?
          6162 ISCHEMI?

L9         352 MARROW(P)TRANSPLANT? AND (ANGIOGENESIS OR ENDOTHELI? OR ISC
HEM
               I?)
```

=> s (marrow or cd34)(P)(transplant?)(P)(angiogenesis or endotheli? or ischemi?)

```
          5583 MARROW
           166 CD34
         12555 TRANSPLANT?
           835 ANGIOGENESIS
          5995 ENDOTHELI?
          6162 ISCHEMI?

L10         44 (MARROW OR CD34)(P)(TRANSPLANT?)(P)(ANGIOGENESIS OR ENDOTHE
LI?
               OR ISCHEMI?)
```

=> d l10 1-44

1. 5,710,123, Jan. 20, 1998, Peptide inhibitors of selectin binding; George A. Heavner, et al., 514/2, 9, 15; 530/300, 317, 321, 328, 333, 334

[IMAGE AVAILABLE]

2. 5,709,859, Jan. 20, 1998, Mixed specificity fusion proteins; Alejandro A. Aruffo, et al., 424/134.1, 136.1, 178.1; 435/69.7; 530/387.3, 388.22, 808, 866 [IMAGE AVAILABLE]

3. 5,705,732, Jan. 6, 1998, Universal donor cells; Peter J. Sims, et al., 800/2; 435/172.3; 536/23.1; 800/DIG.1 [IMAGE AVAILABLE]

4. 5,695,932, Dec. 9, 1997, Telomerase activity assays for diagnosing pathogenic infections; Michael D. West, et al., 435/6, 91.1 [IMAGE AVAILABLE]

5. 5,693,648, Dec. 2, 1997, O-aryl, O-alkyl, O-alkenyl and O-alkynyl-macrolides having immunosuppressive activity; Mark Goulet, et al., 514/291, 211 [IMAGE AVAILABLE]

6. 5,670,148, Sep. 23, 1997, Combined cellular and immunosuppressive therapies; Stephen A. Sherwin, et al., 424/93.21, 93.3, 93.7, 572; 435/172.3 [IMAGE AVAILABLE]

7. 5,645,986, Jul. 8, 1997, Therapy and diagnosis of conditions related to telomere length and/or telomerase activity; Michael D. West, et al., 435/6, 91.2, 183, 184, 194; 436/63; 536/24.31, 24.33 [IMAGE AVAILABLE]

8. 5,635,156, Jun. 3, 1997, Non-lethal methods for conditioning a recipient for bone marrow transplantation; Suzanne T. Ildstad, 424/1.49, 130.1, 141.1, 152.1, 153.1, 154.1, 178.1, 181.1, 183.1; 600/1; 604/20 [IMAGE AVAILABLE]

9. 5,623,056, Apr. 22, 1997, CDS derivatives and methods of use for cellular modulation and enhancement of cellular engraftment; Mark L. Tykocinski, et al., 530/403; 424/193.1, 194.1; 530/395, 402, 868 [IMAGE AVAILABLE]

10. 5,618,785, Apr. 8, 1997, Peptide inhibitors of selectin binding; George A. Heavner, et al., 514/2; 530/328 [IMAGE AVAILABLE]

11. 5,605,821, Feb. 25, 1997, Expression control sequences of the P-selectin gene; Rodger P. McEver, et al., 435/172.3, 320.1, 325, 365, 366, 367, 371, 372; 536/23.1, 23.5, 24.1, 24.31; 935/6, 23, 34 [IMAGE AVAILABLE]

12. 5,602,230, Feb. 11, 1997, Peptide inhibitors of selectin binding; George A. Heavner, et al., 530/327, 328, 329, 330 [IMAGE AVAILABLE]

13. 5,601,828, Feb. 11, 1997, CD8 derivatives and methods of use for cellular modulation and enhancement of cellular engraftment; Mark L. Tykocinski, et al., 424/193.1, 93.1, 184.1, 278.1; 530/395, 868 [IMAGE AVAILABLE]

14. 5,599,703, Feb. 4, 1997, In vitro amplification/expansion of CD34.sup.+ stem and progenitor cells; Thomas A. Davis, et al., 435/373; 424/93.7; 435/385, 386 [IMAGE AVAILABLE]

15. 5,565,560, Oct. 15, 1996, O-Aryl,O-alkyl,O-alkenyl and O-alkynylmacrolides having immunosuppressive activity; Mark Goulet, et al., 540/456 [IMAGE AVAILABLE]

16. 5,550,233, Aug. 27, 1996, Aryl, alkyl, alkenyl and alkynylmacrolides having immunosuppressive activity; Kathleen M. Rupprecht, et al., 540/456, 450 [IMAGE AVAILABLE]

17. 5,547,979, Aug. 20, 1996, TNF inhibition; Siegfried B. Christensen, IV, et al., 514/424; 548/550, 551 [IMAGE AVAILABLE]

18. 5,545,734, Aug. 13, 1996, Aryl and heteroaryl macrolides having immunosuppressive activity; Robert K. Baker, et al., 540/456, 450 [IMAGE AVAILABLE]

19. 5,532,248, Jul. 2, 1996, O-aryl,O-alkyl, and O-alkenyl-macrolides having immunosuppressive activity; Mark Goulet, et al., 514/291, 411; 540/452, 456 [IMAGE AVAILABLE]

20. 5,514,364, May 7, 1996, Non-lethal methods for conditioning a recipient for bone marrow transplantation; Suzanne T. Ildstad, 424/1.49, 130.1, 141.1, 152.1, 153.1, 154.1, 178.1, 183.1; 600/1; 604/20 [IMAGE AVAILABLE]

21. 5,470,726, Nov. 28, 1995, Retrovirus packaging and producer cell lines based on gibbon ape leukemia virus; A. Dusty Miller, et al., 435/172.3, 320.1, 357; 935/70 [IMAGE AVAILABLE]

22. 5,464,935, Nov. 7, 1995, Peptide inhibitors of selectin binding; George A. Heavner, et al., 530/329, 330 [IMAGE AVAILABLE]

23. 5,464,778, Nov. 7, 1995, Glycoprotein ligand for P-selectin and methods of use thereof; Richard D. Cummings, et al., 436/503; 435/7.1, 7.24; 436/501; 536/53, 55.1, 55.2, 123.1 [IMAGE AVAILABLE]

24. 5,462,726, Oct. 31, 1995, Method of inhibiting side effects of solvents containing ricinoleic acid or castor oil or derivatives thereof employing a thromboxane A.sub.2 receptor antagonist and pharmaceutical compositions containing such solvents; Nicholas J. Lodge, 514/558, 529, 559, 560, 561, 562, 563, 922 [IMAGE AVAILABLE]

25. 5,420,154, May 30, 1995, TNF inhibitors; Siegfried B. Christensen, IV, et al., 514/424; 548/551 [IMAGE AVAILABLE]

26. 5,378,464, Jan. 3, 1995, Modulation of inflammatory responses by administration of GMP-140 or antibody to GMP-140; Rodger P. McEver, 424/143.1; 514/8 [IMAGE AVAILABLE]

27. 5,368,051, Nov. 29, 1994, Method of regenerating articular cartilage; Allan R. Dunn, et al., 128/898; 424/426; 530/840 [IMAGE AVAILABLE]

28. 5,352,783, Oct. 4, 1994, Microbial transformation product having immunosuppressive activity; Ali Shafiee, et al., 540/456; 435/119 [IMAGE AVAILABLE]

29. 5,349,061, Sep. 20, 1994, O-heteroaryl, O-alkylheteroaryl, O-alkenylheteroaryl and O-alkynylheteroarylmacrolides having immunosuppressive activity; Peter J. Sinclair, et al., 540/455 [IMAGE AVAILABLE]

30. 5,344,925, Sep. 6, 1994, Imidazolidyl macrolides having immunosuppressive activity; Mark Goulet, et al., 540/456 [IMAGE AVAILABLE]

31. 5,317,019, May 31, 1994, Inhibition of interleukin-1 and tumor necrosis factor production by monocytes and/or macrophages; Paul E. Bender, et al., 514/224.2, 230.5, 258, 303, 333, 338, 339 [IMAGE AVAILABLE]

32. 5,284,877, Feb. 8, 1994, Alkyl and alkenyl macrolides having immunosuppressive activity; Helen M. Organ, et al., 514/183, 291, 411; 540/455, 456 [IMAGE AVAILABLE]

33. 5,284,840, Feb. 8, 1994, Alkylidene macrolides having

immunosuppressive activity; Kathleen Rupprecht, et al., 514/183, 291, 411; 540/455, 456 [IMAGE AVAILABLE]

34. 5,262,533, Nov. 16, 1993, Amino O-aryl macrolides having immunosuppressive activity; Peter J. Sinclair, et al., 540/456 [IMAGE AVAILABLE]

35. 5,252,732, Oct. 12, 1993, D-heteroaryl, O-alkylheteroaryl, O-alkenylheteroaryl and O-alkynylheteroarylmacrolides having immunosuppressive activity; Peter J. Sinclair, et al., 540/456 [IMAGE AVAILABLE]

36. 5,250,678, Oct. 5, 1993, O-aryl, O-alkyl, O-alkenyl and O-alkynylmacrolides having immunosuppressive activity; Mark Goulet, et al., 540/456, 452 [IMAGE AVAILABLE]

37. 5,247,076, Sep. 21, 1993, Imidazolidyl macrolides having immunosuppressive activity; Mark Goulet, et al., 540/456 [IMAGE AVAILABLE]

38. 5,242,687, Sep. 7, 1993, Method of reducing cellular immune response involving T-cells using CD8-bearing antigen presenting cells; Mark L. Tykocinski, et al., 424/184.1, 93.71, 178.1, 278.1; 435/252.3; 514/2, 8, 885; 530/402, 403, 866, 868 [IMAGE AVAILABLE]

39. 5,208,241, May 4, 1993, N-heteroaryl, N-alkylheteroaryl, N-alkenylheteroaryl and N-alkynylheteroarylmacrolides having immunosuppressive activity; Hyun O. Ok, et al., 514/291, 183, 411; 540/456 [IMAGE AVAILABLE]

40. 5,208,228, May 4, 1993, Aminomacrolides and derivatives having immunosuppressive activity; Hyun O. Ok, et al., 514/183, 230.5, 291, 294; 540/455, 456; 544/105 [IMAGE AVAILABLE]

41. 5,198,424, Mar. 30, 1993, Functionally active selectin-derived peptides; Rodger P. McEver, 514/13; 424/1.37, 1.69; 427/2.24, 2.25; 514/12, 14, 15, 16; 530/324, 325, 326, 327; 623/11 [IMAGE AVAILABLE]

42. 5,189,042, Feb. 23, 1993, Fluoromacrolides having immunosuppressive activity; Mark Goulet, et al., 514/291, 183, 411; 540/456 [IMAGE AVAILABLE]

43. 5,162,334, Nov. 10, 1992, Amino O-alkyl, O-alkenyl and O-alkynlmacrolides having immunosuppressive activity; Mark Goulet, et al., 514/291, 63; 540/452, 456 [IMAGE AVAILABLE]

44. 5,110,722, May 5, 1992, Cell, tissue or organ storage solution; Kelvin G. M. Brockbank, et al., 435/1.1, 2, 374, 406 [IMAGE AVAILABLE]

=> d l103,8,14,20 date

'L103' NOT FOUND

=> d l10 3,8,14,20 date

L10: 3 of 44

TITLE:	Universal donor cells		
US PAT NO:	5,705,732 [IMAGE AVAILABLE]	DATE ISSUED:	Jan. 6, 1998
APPL-NO:	08/087,007	DATE FILED:	Jul. 1, 1993
REL-US-DATA:	Continuation-in-part of Ser. No. 906,394, Jun. 29, 1992, abandoned, and Ser. No. 271,562, Feb. 7, 1994, Pat. No. 5,573,940, which is a continuation-in-part of Ser. No. 729,926, Jul. 15, 1991, abandoned, which is a		

continuation-in-part of Ser. No. 365,199, Jun. 12, 1989, Pat. No. 5,135,916.

L10: 8 of 44

TITLE: Non-lethal methods for conditioning a recipient for bone marrow transplantation
US PAT NO: 5,635,156 [IMAGE AVAILABLE] DATE ISSUED: Jun. 3, 1997
APPL-NO: 08/337,785 DATE FILED: Nov. 14, 1994
REL-US-DATA: Continuation-in-part of Ser. No. 120,256, Sep. 13, 1993, Pat. No. 5,514,364.

L10: 14 of 44

TITLE: In vitro amplification/expansion of CD34.sup.+ stem and progenitor cells
US PAT NO: 5,599,703 [IMAGE AVAILABLE] DATE ISSUED: Feb. 4, 1997
APPL-NO: 08/142,569 DATE FILED: Oct. 28, 1993

L10: 20 of 44

TITLE: Non-lethal methods for conditioning a recipient for bone marrow transplantation
US PAT NO: 5,514,364 [IMAGE AVAILABLE] DATE ISSUED: May 7, 1996
APPL-NO: 08/120,256 DATE FILED: Sep. 13, 1993

=> d l103,6,8,14,20 kwic

'L103' NOT FOUND
YOU HAVE RECEIVED THIS ERROR MESSAGE 2 CONSECUTIVE TIMES
The L# has not been defined in this session, or else it
was deleted. To see all L#s defined in this session, enter
'DISPLAY HISTORY' at an arrow prompt (=>).
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=> d l10 3,6,8,14,20 kwic

US PAT NO: 5,705,732 [IMAGE AVAILABLE] L10: 3 of 44

DETDESC:

DETD(4)

Although described with reference to endothelial cells, especially dissociated endothelial cells for implantation or injection into a host, the methods and compositions described herein are not limited to endothelial cells. Other cell types can be similarly modified for transplantation. Examples of other cell types include fibroblasts, epithelial cells, skeletal, cardiac and smooth muscle cells, hepatocytes, pancreatic islet cells, bone marrow cells, astrocytes, Schwann cells, and other cell types, dissociated or used as tissue (i.e., organs). As described herein, "endothelial cells" will be construed to encompass modification of these other cell types unless otherwise specified or described specifically in the. . .

US PAT NO: 5,670,148 [IMAGE AVAILABLE] L10: 6 of 44

SUMMARY:

BSUM(5)

There . . . of autologous or allogeneic cells or tissue, and even instances of xenogeneic cells or tissue. Such cellular therapies, including bone marrow transplantation, organ transplants or grafts, skin grafts, muscle transplants, blood transfusions or

particular blood cell populations, e.g., white blood cells and platelets, endocrine tissue, islet cells, e.g., islets of Langerhans, adrenal cells, hepatic cells, retinal epithelial cells, endothelial cells, osteoblasts, keratinocytes, chondrocytes and the like, involve the administering of cells or tissue to a mammalian host, where the. . . and functional, usually substituting for or interdigitating with the diseased or incompetent cells or tissue of the host. Similarly, cellular transplant therapies may be employed for a variety of purposes using cells modified in a variety of ways: cells altered to. . .

US PAT NO: 5,635,156 [IMAGE AVAILABLE] L10: 8 of 44

DETDESC:

DETD(13)

It . . . note that the same failure of alloengraftment did not occur if TBI is given one week prior to allogeneic bone marrow transplantation and followed by CyP treatment. Unlike ALG, which is believed to be immunosuppressive but not cytoreductive, CyP is toxic to. . . damage to hematopoietic niches and syngeneic repopulation necessary to resist alloengraftment. In addition, CyP has been shown to result in endothelial injury with subsequent loss in the integrity of the sinus endothelial barrier (Shirota and Tavassoli, 1991, Exp. Hematol. 19: 369). The augmentation of donor chimerism seen with CyP, as compared to. . .

US PAT NO: 5,599,703 [IMAGE AVAILABLE] L10: 14 of 44

SUMMARY:

BSUM(5)

Hematopoiesis, . . . mature blood cells, involves a complex scheme of multilineage differentiation (Metcalf, Nature 339:27-30, 1989). Hematopoiesis occurs mainly in the bone marrow where hematopoietic stem cells (pluripotential stem cells) proliferate and differentiate into progenitor cells which then develop into different types of mature blood cells (Gordon et al., Bone Marrow Transplant 4:335, 1989; Dexter et al., Ann. Rev. Cell Bio. 3:423, 1987). The hematopoietic stem and progenitor cell is functionally characterized. . . Exp. Hematol. 14:878, 1986). Phenotypically, the only well defined human hematopoietic stem and progenitor cell marker at present is the CD34 hematopoietic cell surface antigen (Civin et al., J. Immunol. 133:157, 1984; Strauss et al., Exp. Hematol. 14:878, 1986). This cell. . . glycosylated 115-Kd type I integral membrane protein of unknown function (Civin, Exp. Hematol. 18:461, 1990). The sequence of the human **CD34** cDNA suggests the presence of several O-linked glycosylation sites (Simmons et al., J. Immunol. 148:267, 1992) and that the attachment of lineage-specific glycans to the CD34 backbone may permit binding to lectins on marrow stromal cells or the extracellular matrix. The CD34 antigen is expressed by approximately 1-5% of the human bone marrow cell population (Civin et al., Exp. Hematol. 15:10, 1987; Civin et al., J. Immunol. 133:157, 1984; Strauss et al., Exp.. . . hematopoietic cell lineages (Andrews et al., J. Exp. Med. 172:355, 1990; Berstein et al., Blood 77:2316, 1991). In addition, the **CD34** antigen is expressed on human vascular endothelial cells (Fina et al., Blood 75:2417, 1990), suggesting a possible role for the antigen in adhesion or cellular interactions. Purified CD34.sup.+ stem and progenitor cells can reconstitute hematopoiesis in vivo (Berenson et al., J. Clin. Invest. 81:951, 1988; Berenson, et al., Blood 77:1717, 1991) and support myelopoiesis for several months in association with stromal cells in long-term bone marrow cultures (Allan et al, Exp. Hematol. 12:517, 1984; Andrews et al, J. Exp. Med. 172:355, 1990; Sutherland et al, Blood. . . hematopoietic stem cell can be identified by additional phenotypic

markers, singly and in combination. The most primitive pluripotent human bone marrow hematopoietic stem cells are small (low forward light scatter and side scatter) CD34.sup.+, Thy1.sup.+/-, c-kit.sup.+, HLA-DR.sup.-, CD38.sup.-, CD15.sup.-, rhodamine-123 dull and 4-hydroperoxycyclophosphamide-resistant cells, but are hematopoietic lineage marker negative (Lin.sup.-) (Baum et al,. . .

SUMMARY:

BSUM(6)

The bone marrow serves in vivo as the requisite microenvironment where constitutive hematopoiesis, stem cell differentiation and stem cell self-renewal occurs (Gordon et al., Bone Marrow Transplant 4:335, 1989; Dexter et al., Ann. Rev. Cell Bio. 3:423, 1987; Allan et al., Exp. Hematol. 12:517, 1984). This microenvironment has two major components--the lymphohematopoietic elements and the bone marrow stroma. The bone marrow stroma, made up of fibroblasts, endothelial cells, adipocytes and macrophages/monocytes, provides a heterogeneous adherent cell layer. Only these heterogeneous adherent cell layers have been shown to be effective in supporting long-term in vitro CD34.sup.+ stem and progenitor cell proliferation and differentiation (Dorshkind, Annu. Rev. Immunol. 8:111, 1990; Dexter et al., J. Cell Physiol. 91:335, 1977; Allan et al., Exp. Hematol. 12:517, 1984). Within the bone marrow stroma, CD34.sup.+ hematopoietic stem and progenitor cells undergo self-renewal, proliferation and differentiation (Andrews et al., J. Exp. Med. 172:355, 1990; Sutherland et. . . Gordon et al., J. Cell Physiol. 130:150,1987; Gordon et al., Br. J. Haematol. 60:129, 1985). The proliferation and differentiation of **CD34**.sup.+ stem and progenitor cell in stromal dependent cultures is thought to involve cell-to-cell interactions (Andrews et al., J. Exp. Med.. . .

DETDESC:

DETD(82)

Peripheral . . . 4 days after irradiation and did not recover before the death of the animals. However, lethally irradiated mice receiving bone marrow transplants of 5.times.10.sup.4 pooled blast cells from day 7 colonies grown on endothelial monolayers in the presence of GM-CSF+IL-3 all survived >60 days after transplantation.

US PAT NO: 5,514,364 [IMAGE AVAILABLE] L10: 20 of 44

DETDESC:

DETD(11)

It . . . note that the same failure of alloengraftment did not occur if TBI is given one week prior to allogeneic bone marrow transplantation and followed by CyP treatment. Unlike ALG, which is believed to be immunosuppressive but not cytoreductive, CyP is toxic to. . . damage to hematopoietic niches and syngeneic repopulation necessary to resist alloengraftment. In addition, CyP has been shown to result in endothelial injury with subsequent loss in the integrity of the sinus endothelial barrier (Shirota and Tavassoli, 1991, Exp. Hematol. 19:369). The augmentation of donor chimerism seen with CyP, as compared to ALG,. . .

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Ref    Items  Index-term
E1         1  AU=ISNENGHI, E.
E2         2  AU=ISNENGHI, EDOARDO
E3         0 *AU=ISNER
E4         1  AU=ISNER A
E5         1  AU=ISNER A B
E6        10  AU=ISNER A F
E7        13  AU=ISNER A.F.
E8        13  AU=ISNER AF
E9         1  AU=ISNER D
E10       38  AU=ISNER J
E11        1  AU=ISNER J D
E12        1  AU=ISNER J J

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Ref    Items  Index-term
E13      411  AU=ISNER J M
E14        3  AU=ISNER J.
E15      202  AU=ISNER J.M.
E16      185  AU=ISNER JM
E17        1  AU=ISNER L
E18        1  AU=ISNER P D
E19        1  AU=ISNER P.D.
E20        1  AU=ISNER PD
E21        3  AU=ISNER R E
E22        9  AU=ISNER R J
E23        4  AU=ISNER R.J.
E24        4  AU=ISNER RJ

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?s e13-e16

             411  AU=ISNER J M
               3  AU=ISNER J.
             202  AU=ISNER J.M.
             185  AU=ISNER JM
     S11     801  E13-E16
?s s11 and angiogen?

             801  S11
           18733  ANGIOGEN?
     S12      88  S11 AND ANGIOGEN?
?rd s12

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...examined 50 records  (50)
...completed examining records
     S13      50  RD S12 (unique items)
?s s11 and endothelial?
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            801  S11
         142256  ENDOTHELIAL?
     S14     131  S11 AND ENDOTHELIAL?
?s s14 and (progenitor? or stem)

            131  S14
          41336  PROGENITOR?
         174492  STEM
     S15      12  S14 AND (PROGENITOR? OR STEM)
?rd s15

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
...completed examining records
     S16       6  RD S15 (unique items)
?t s16/7/all


 16/7/1     (Item 1 from file: 55)
DIALOG(R)File  55:BIOSIS PREVIEWS(R)
(c) 1997 BIOSIS. All rts. reserv.

13451523     BIOSIS Number: 99451523
  Isolation of putative progenitor endothelial cells for angiogenesis
  Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T;
Witzenbichler B; Schatteman G; Isner J M
  Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med.,
736 Cambridge St., Boston, MA 02135, USA
  Science (Washington D C) 275 (5302). 1997.  964-967.
  Full Journal Title:  Science (Washington D C)
  ISSN: 0036-8075
  Language: ENGLISH
  Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192
  Putative endothelial cell (EC) progenitors or angioblasts were isolated
from human peripheral blood by magnetic bead selection on the basis of cell
surface antigen expression. In vitro, these cells differentiated into ECs.
In animal models of ischemia, heterologous, homologous, and autologous EC
progenitors incorporated into sites of active angiogenesis. These findings
suggest that EC progenitors may be useful for augmenting collateral vessel
growth to ischemic tissues (therapeutic angiogenesis) and for delivering
anti- or pro-angiogenic agents, respectively, to sites of pathologic or
utilitarian angiogenesis.


 16/7/2     (Item 2 from file: 55)
DIALOG(R)File  55:BIOSIS PREVIEWS(R)
(c) 1997 BIOSIS. All rts. reserv.

13302641     BIOSIS Number: 99302641
  Blood cell drived endothelial cell precursor can participate in
angiogenesis in vivo
  Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
  St. Elizabeth's Med. Cent., Boston, MA, USA
  Circulation 94 (8 SUPPL.). 1996.  I237.
  Full Journal Title:  69th Scientific Sessions of the American Heart
Association, New Orleans, Louisiana, USA, November 10-13, 1996.
Circulation
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ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

16/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768
Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferative activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 mu-g) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 (P lt 0.05 versus control), and returned to baseline levels by day 7. SMC proliferation in midzone collaterals also increased 2.7-fold in response to VEGF (P lt 0.05). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collateral of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure wets documented at day 7 after VEGF (P lt 0.01 versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

16/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic

[redacted]ibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092

Background: Recent studies have suggested that vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF) may have synergistic effects on the induction of angiogenesis in vitro. Therefore, we investigated the hypothesis that the simultaneous administration of VEGF and bFGF, each having been previously shown to independently enhance collateral development in an animal model of hind limb ischemia, could have a synergistic effect in vivo. Methods and Results: Ten days after surgical induction of unilateral hind limb ischemia, New Zealand White rabbits were randomized to receive either VEGF 500 mu-g alone (n=6), bFGF 10 mu-g alone (n=7), VEGF 500 mu-g, immediately followed by 10 mu-g bFGF (n=7), or vehicle only (control animals, n=8) in each case administered intra-arterially via a catheter in the internal iliac artery of the ischemic limb. BP ratio (BPR, ischemic/healthy limb) at day 10 for the VEGF+bFGF group was 0.82 +- 0.01, much superior (P lt .0005) to that of either the VEGF group (0.52 +- 0.02) or the bFGF group (0.57 +- 0.02). This outcome persisted at day 30: BPR in the VEGF+bFGF group (0.91 +- 0.02) exceeded that of the control group (0.49+-0.05, P lt .0001), the VEGF group (0.65 +- 0.03, P lt .0005), or the bFGF group (0.66 +- 0.03, P lt .0005). Serial angiography demonstrated a progressive increase in luminal diameter of the stem collateral artery and the number of opacified collaterals in the thigh of the ischemic limbs in all groups. Stem artery diameter with VEGF+bFGF (1.34 +- 0.07 mm) on day 30 was significantly (P lt .05) greater than with either VEGF (1.09 +- 0.09) or bFGF (1.18 +- 0.06) alone. Capillary density was significantly greater (P lt .05) in VEGF+bFGF animals (275 +- 20 mm-2) compared with VEGF (201+-8) or bFGF (209 +- 15). Conclusions: Combined administration of VEGF and bFGF stimulates significantly greater and more rapid augmentation of collateral circulation, resulting in superior hemodynamic improvement compared with either VEGF or bFGF alone. This synergism of two angiogenic mitogens with different target cell specificities may have important implications for the treatment of severe arterial insufficiency in patients whose disease is not amenable to direct revascularization.

16/7/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738

Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

Vascular endothelial growth factor (VEGF) is a heparin-binding, endothelial cell-specific mitogen. Previous studies have suggested that VEGF is a regulator of naturally occurring physiologic and pathologic angiogenesis. In this study we investigated the hypothesis that the angiogenic potential of VEGF is sufficient to constitute a therapeutic effect. The soluble 165 amino acid isoform of VEGF was administered as a single intraarterial bolus to the internal iliac artery of rabbits in which the ipsilateral femoral artery was excised to induce severe, unilateral hind limb ischemia. Doses of 500-1,000 mu-g of VEGF produced statistically significant augmentation of collateral vessel development by angiography as well as the number of capillaries by histology; consequent amelioration of the hemodynamic deficit in the ischemic limb was significantly greater in animals receiving VEGF than in nontreated controls (calf blood pressure ratio, 0.75 +- 0.14 vs. 0.48 +- 0.19, P lt 0.05). Serial angiograms disclosed progressive linear extension of the collateral artery of origin (stem artery) to the distal point of parent vessel (reentry artery) reconstitution in seven of nine VEGF-treated animals. These findings establish proof of principle for the concept that the angiogenic activity of VEGF is sufficiently potent to achieve therapeutic benefit. Such a strategy might ultimately be applicable to patients with severe limb ischemia secondary to arterial occlusive disease.

16/7/6 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency

Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S. ; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA

American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English

Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferarive activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 microg) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 (P < 0.05 versus control), and returned to baseline levels by day 7. SMC

proliferation in midzone collaterals also increased 2.7-fold in response to VEGF ($P < 0.05$). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collaterals of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure was documented at day 7 after VEGF ($P < 0.01$ versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

?rd s14

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
...examined 50 records (50)
...examined 50 records (100)
...completed examining records
S17 69 RD S14 (unique items)

?t s13/3/all

13/3/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13451523 BIOSIS Number: 99451523
Isolation of putative progenitor endothelial cells for angiogenesis
Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; Isner J M
Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston, MA 02135, USA
Science (Washington D C) 275 (5302). 1997. 964-967.
Full Journal Title: Science (Washington D C)
ISSN: 0036-8075
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192

13/3/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13420082 BIOSIS Number: 99420082
Vascular endothelial growth factor-vascular permeability factor augments nitric oxide release from quiescent rabbit and human vascular endothelium
Van Der Zee R; Murohara T; Luo Z; Zollmann F; Passeri J; Lekutat C; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135-2997, USA
Circulation 95 (4). 1997. 1030-1037.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 007 Ref. 092225

13/3/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13393156 BIOSIS Number: 99393156
Hypoxia induces vascular endothelial growth factor in cultured human endothelial cells
Namiki A; Aikawa J; Moroi M; Ishikawa M; Fukazawa M; Yamaguchi T; Isner J M
Third Dep. Intern. Med., Toho Univ. Ohashi Hosp., Tokyo, Japan
Japanese Circulation Journal 60 (7). 1996. 467-468.
Full Journal Title: 60th Annual Scientific Meeting of the Japanese Circulation Society, Osaka, Japan, March 19-21, 1996. Japanese Circulation Journal
ISSN: 0047-1828
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 003 Ref. 039795

13/3/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13334719 BIOSIS Number: 99334719
Direct intramuscular gene transfer of naked DNA encoding vascular endothelial growth factor augments collateral development and tissue perfusion
Tsurumi Y; Takeshita S; Chen D; Kearney M; Rossow S T; Passeri J; Horowitz J R; Symes J F; Isner J M
St. Elizabeth's Med. Cent. Boston, 736 Cambridge St., Boston, MA 02135, USA
Circulation 94 (12). 1996. 3281-3290.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 003 Ref. 037833

13/3/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13304707 BIOSIS Number: 99304707
Arterial gene transfer of naked DNA in patients with critical limb ischemia
Isner J M; Pieczek A; Schainfeld R; Blair R; Haley L; Asahara T; Rosenfield K; Razvi S; Symes J F
St. Elizabeth's Med. Center, Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I591.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 006924

13/3/6 (Item 6 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

13/3/7 (Item 7 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13301846 BIOSIS Number: 99301846
Angiogenesis is impaired in ApoE knock out mice due to reduced expression of vascular endothelial growth factor
Couffinhal T; Silver M; Kearney M; Sullivan A; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I102.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004063

13/3/8 (Item 8 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13286348 BIOSIS Number: 99286348
Elevated levels of basic fibroblast growth factor in patients with limb ischemia
Rohovsky S; Kearney M; Pieczek A; Rosenfield K; Schainfeld R; D'Amore P A ; Isner J M
St. Elizabeth's Medical Center, 736 Cambridge St., Boston, MA 02135, USA
American Heart Journal 132 (5). 1996. 1015-1019.
Full Journal Title: American Heart Journal
ISSN: 0002-8703
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 001 Ref. 001820

13/3/9 (Item 9 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13282275 BIOSIS Number: 99282275
Collateral vessel development induced by therapeutic angiogenesis is associated with improvement of tissue perfusion
Van Belle E; Chen D; Bunting S; Ferrara N; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
European Heart Journal 17 (ABSTR. SUPPL.). 1996. 130.
Full Journal Title: XVIIIth Congresst s17/3/all
of the European Society of
Cardiology, Birmingham, England, UK, August 25-29, 1996. European Heart Journal
ISSN: 0195-668X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 012 Ref. 221922

13/3/10 (Item 10 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13257733 BIOSIS Number: 99257733
Gene transfer of naked DNA encoding for three isoforms of vascular endothelial growth factor stimulates collateral development in vivo
Takeshita S; Tsurumi Y; Couffinahl T; Asahara T; Bauters C; Symes J; Ferrara N; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
Laboratory Investigation 75 (4). 1996. 487-501.
Full Journal Title: Laboratory Investigation
ISSN: 0023-6837
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 012 Ref. 173363

13/3/11 (Item 11 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13246677 BIOSIS Number: 99246677
Therapeutic angiogenesis following arterial gene transfer of vascular endothelial growth factor in a rabbit model of hindlimb ischemia
Takeshita S; Weir L; Chen D; Zheng L P; Riessen R; Bauters C; Symes J F; Ferrara N; Isner J M
Dep. Med. Surgery Biomedical Res., St. Elizabeth's Med. Cent. Boston, Tufts Univ. Sch. Med., Boston, MA 02135, USA
Biochemical and Biophysical Research Communications 227 (2). 1996. 628-635.
Full Journal Title: Biochemical and Biophysical Research Communications
ISSN: 0006-291X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 011 Ref. 162307

13/3/12 (Item 12 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13196280 BIOSIS Number: 99196280
The role of angiogenic cytokines in cardiovascular disease
Isner J M
Dep. Med., Biomedical Res., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Clinical Immunology and Immunopathology 80 (3 PART 2). 1996. S82-S91.
Full Journal Title: Clinical Immunology and Immunopathology
ISSN: 0090-1229
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 009 Ref. 128287

13/3/13 (Item 13 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13130850 BIOSIS Number: 99130850
Clinical evidence of angiogenesis after arterial gene transfer of phVEGF-165 in patient with ischaemic limb
Isner J M; Pieczek A; Schainfeld R; Blair R; Haley L; Asahara T; Rosenfield K; Razvi S; Walsh K; Symes J F
St. Elizabeth's Med. Cent., Boston, MA 02135, USA
Lancet (North American Edition) 348 (9024). 1996. 370-374.
Full Journal Title: Lancet (North American Edition)
ISSN: 0099-5355
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 006 Ref. 078981

13/3/14 (Item 14 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13092433 BIOSIS Number: 99092433
VEGF improves myocardial blood flow but produces EDRF-mediated hypotension in porcine hearts
Hariawala M D; Horowitz J R; Esakof D; Sheriff D D; Walter D H; Keyt B; Isner J M; Symes J F
Div. Cardiothoracic Surg., Cardiol. Biomedical Res., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Journal of Surgical Research 63 (1). 1996. 77-82.
Full Journal Title: Journal of Surgical Research
ISSN: 0022-4804
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 004 Ref. 057882

13/3/15 (Item 15 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12166592 BIOSIS Number: 98766592
VEGF expression in a mouse model of hind limb ischemia
Couffinhal T; Silver M; Witzenbichler B; Sheriff D D; Isner J M
St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., Boston, MA 02135, USA
FASEB Journal 10 (3). 1996. A578.
Full Journal Title: Experimental Biology 96, Part II, Washington, D.C., USA, April 14-17, 1996. FASEB Journal

ISSN: 0892-6638
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 005 Ref. 083381

13/3/16 (Item 16 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12166394 BIOSIS Number: 98766394
Nitric oxide precursor augments angiogenesis and attenuates endothelial dysfunction in collateral circulation in rabbit ischemic hindlimb in vivo
Asahara T; Bauters C; Wu T; Zheng L P; Chen D; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
FASEB Journal 10 (3). 1996. A545.
Full Journal Title: Experimental Biology 96, Part II, Washington, D.C., USA, April 14-17, 1996. FASEB Journal
ISSN: 0892-6638
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 005 Ref. 083183

13/3/17 (Item 17 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12142043 BIOSIS Number: 98742043
The in vivo bioactivity of vascular endothelial growth factor-vascular permeability factor is independent of N-linked glycosylation
Walter D H; Hink U; Asahara T; Van Belle E; Horowitz J; Tsurumi Y; Vandlen R; Heinsohn H; Keyt B; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Laboratory Investigation 74 (2). 1996. 546-556.
Full Journal Title: Laboratory Investigation
ISSN: 0023-6837
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 009 Ref. 126318

13/3/18 (Item 18 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12117913 BIOSIS Number: 98717913
Revascularization achieved by therapeutic angiogenesis is associated with improvement of tissue perfusion
Van Belle E; Chen D; Bunting S; Ferrara N; Isner J M
St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA, USA
Journal of the American College of Cardiology 27 (2 SUPPL. A). 1996. 35A.
Full Journal Title: 45th Annual Scientific Session of the American College of Cardiology, Orlando, Florida, USA, March 24-27, 1996. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER

Print Number: Biological Abstracts/RRM Vol. 048 Iss. 004 Ref. 064095

13/3/19 (Item 19 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12075790 BIOSIS Number: 98675790
Hypoxia-induced paracrine regulation of vascular endothelial growth factor receptor expression
Brogi E; Schatteman G; Wu T; Kim E A; Varticovski L; Keyt B; Isner J M
Div. Cardiol., St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 97 (2). 1996. 469-476.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 006 Ref. 076071

13/3/20 (Item 20 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768

13/3/21 (Item 21 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092

13/3/22 (Item 22 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11986069 BIOSIS Number: 98586069
A mouse model of angiogenesis
Zheng L P; Couffinhal T; Sheriff D D; Horowitz J; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA
Circulation 92 (8 SUPPL.). 1995. I750.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 016187

13/3/23 (Item 23 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11986061 BIOSIS Number: 98586061
Scatter factor stimulates angiogenesis in a rabbit model of hindlimb ischemia
Van Belle E; Chen D; Zheng L P; Schwall R; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA, USA
Circulation 92 (8 SUPPL.). 1995. I748.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 016179

13/3/24 (Item 24 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11983012 BIOSIS Number: 98583012
Hypoxia induces vascular endothelial growth factor mRNA expression and protein production in human endothelial cells in vitro
Namiki A; Brogi E; Kearney M; Kim E A; Wu T; Varticovski L; Isner J M
Third Dep. Int. Med., Toho University Ohashi Hospital, Tokyo, Japan
Circulation 92 (8 SUPPL.). 1995. I112.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 013130

13/3/25 (Item 25 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11733542 BIOSIS Number: 98333542
Recovery of disturbed endothelium-dependent flow in the

collateral-perfused rabbit ischemic hindlimb after administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 91 (11). 1995. 2802-2809.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 041266

13/3/26 (Item 26 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11693792 BIOSIS Number: 98293792
Physiologic assessment of angiogenesis by arterial gene therapy with vascular endothelial growth factor
Isner J M; Takeshita S; Bauters C; Asahara T; Zheng L P; Russow S T; Kearney M; Barry J J; Ferrara N; Symes J F
Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Journal of Cellular Biochemistry Supplement 0 (21A). 1995. 378.
Full Journal Title: Keystone Symposium on Gene Therapy and Molecular Medicine, Steamboat Springs, Colorado, USA, March 26-April 1, 1995. Journal of Cellular Biochemistry Supplement
ISSN: 0733-1959
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 007 Ref. 114485

13/3/27 (Item 27 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11639861 BIOSIS Number: 98239861
Site-specific therapeutic angiogenesis after systemic administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., Suite 306, 11 Nevins St., Boston, MA 02135, USA
Journal of Vascular Surgery 21 (2). 1995. 314-325.
Full Journal Title: Journal of Vascular Surgery
ISSN: 0741-5214
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 011 Ref. 162037

13/3/28 (Item 28 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11453686 BIOSIS Number: 98053686
Intramuscular administration of vascular endothelial growth factor induces dose-dependent collateral artery augmentation in a rabbit model of chronic limb ischemia

Takeshita S; Pu L-Q; Stein L A; Sniderman A D; Bunting S; Ferrara N; Isner J M; Symes J F
Div. Cardiothoracic Surgery, St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Circulation 90 (5 PART 2). 1994. II228-II234.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 003 Ref. 038230

13/3/29 (Item 29 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11431809 BIOSIS Number: 98031809
Synergism between vascular endothelial growth factor and basic fibroblast growth factor in the induction of angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Isner J M; Symes J F
Dep. Med., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
Surgical Forum 45 (0). 1994. 358-360.
Full Journal Title: Surgical Forum
ISSN: 0071-8041
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 002 Ref. 016353

13/3/30 (Item 30 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11426438 BIOSIS Number: 98026438
A single intra-arterial injection of basic fibroblast growth factor induces angiogenesis in a rabbit ischaemic hindlimb
Bauters C; Asahara T; Takeshita S; Zheng L P; Horowitz J; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
European Heart Journal 15 (ABSTR. SUPPL.). 1994. 35.
Full Journal Title: Joint XIIth World Congress of Cardiology and the XVIth Congress of the European Society of Cardiology, Berlin, Germany, September 10-14, 1994. European Heart Journal
ISSN: 0195-668X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 013944

13/3/31 (Item 31 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11426374 BIOSIS Number: 98026374
Physiologic assessment of angiogenesis induced by vascular endothelial growth factor in a rabbit ischaemic hindlimb
Bauters C; Asahara T; Takeshita S; Zheng L P; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA

European Heart Journal 15 (ABSTR. SUPPL.). 1994. 19.
Full Journal Title: Joint XIIth World Congress of Cardiology and the XVIth Congress of the European Society of Cardiology, Berlin, Germany, September 10-14, 1994. European Heart Journal
ISSN: 0195-668X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 013880

13/3/32 (Item 32 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11424310 BIOSIS Number: 98024310
In vivo synergistic effects of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in rabbit ischemic hindlimb
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA
Circulation 90 (4 PART 2). 1994. I585.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 011816

13/3/33 (Item 33 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11423272 BIOSIS Number: 98023272
Site-specific therapeutic angiogenesis following systemic intravenous administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 90 (4 PART 2). 1994. I393.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 010778

13/3/34 (Item 34 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11421639 BIOSIS Number: 98021639
Physiologic assessment of angiogenesis by arterial gene therapy with vascular endothelial growth factor
Takeshita S; Bauters C; Asahara T; Zheng L P; Rossow S T; Kearney M; Barry J J; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA

Circulation 90 (4 PART 2). 1994. I90.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 009145

13/3/35 (Item 35 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11421632 BIOSIS Number: 98021632
Modulation by angiogenic growth factor of disturbed endothelium-dependent flow in collateral-perfused rabbit ischemic hindlimb
Bauters C; Asahara T; Zheng L P; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
Circulation 90 (4 PART 2). 1994. I88.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 009138

13/3/36 (Item 36 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11249068 BIOSIS Number: 97449068
Indirect angiogenic cytokines upregulate VEGF and bFGF gene expression in vascular smooth muscle cells, whereas hypoxia upregulates VEGF expression only
Brogi E; Wu T; Namiki A; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 90 (2). 1994. 649-652.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 098 Iss. 008 Ref. 103380

13/3/37 (Item 37 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11016288 BIOSIS Number: 97216288
Physiologic assessment of angiogenesis induced by a single intra-arterial bolus of vascular endothelial growth factor in the rabbit ischemic hindlimb
Bauters C; Asahara T; Takeshita S; Zheng L P; Horowitz J; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1994. 380A.
Full Journal Title: 43rd Annual Scientific Session of the American College of Cardiology, Atlanta, Georgia, USA, March 13-17, 1994. Journal

of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 005 Ref. 079280

13/3/38 (Item 38 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11016124 BIOSIS Number: 97216124
Angiogenesis induced in vivo following site-specific administration of vascular endothelial growth factor (VEGF) is potentiated by systemic administration of heparin
Asahara T; Takeshita S; Zheng L P; Bauters C; Horowitz J; Bunting S; Ferrara N; Symes J; Isner J M
St. Elizabeth's Hosp., Tufts Med. Sch., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1994. 338A.
Full Journal Title: 43rd Annual Scientific Session of the American College of Cardiology, Atlanta, Georgia, USA, March 13-17, 1994. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 005 Ref. 079116

13/3/39 (Item 39 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

13/3/40 (Item 40 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10857327 BIOSIS Number: 97057327
In vivo evidence of enhanced angiogenesis following direct arterial gene transfer of the plasmid encoding vascular endothelial growth factor
Takeshita S; Zheng L P; Asahara T; Riessen R; Brogi E; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I476.

Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 015755

13/3/41 (Item 41 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10856751 BIOSIS Number: 97056751
Therapeutics angiogenesis: A single intra-arterial bolus of vascular endothelial growth factor augments collateral vessel formation in a rabbit ischemic hindlimb
Takeshita S; Zheng L P; Asahara T; Pu L-Q; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I370.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 015179

13/3/42 (Item 42 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10856503 BIOSIS Number: 97056503
Transforming growth factor-beta 1 increases the expression of vascular endothelial growth factor in human arterial smooth muscle cells
Brogi E; Ferrara N; Isner J M
St. Elizabeth's Hosp., Tufts Univ. Sch. Med., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I324.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 014931

13/3/43 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

10303190 EMBASE No: 97114821
Estradiol accelerates functional endothelial recovery after arterial injury
Krasinski K.; Spyridopoulos I.; Asahara T.; Van der Zee R.; Isner J.M.; Losordo D.W.
USA
Circulation (USA) , 1997, 95/7 (1768-1772) CODEN: CIRCA ISSN: 0009-7322

DOCUMENT TYPE: Journal
LANGUAGES: English SUMMARY LANGUAGES: English
NUMBER OF REFERENCES: 16

13/3/44 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

10263816 EMBASE No: 97074504
Angiogenesis for revascularization of ischaemic tissues
Isner J.M.
J.M. Isner, Department of Medicine, St Eliznbeth's Medical Center, Tufts University School of Medicine, Boston, MA USA
European Heart Journal (United Kingdom) , 1997, 18/1 (1-2) CODEN: EHJOD ISSN: 0195-668X
DOCUMENT TYPE: Journal
LANGUAGES: English
NUMBER OF REFERENCES: 12

13/3/45 (Item 3 from file: 72)
DIALOG(R)File 72:EMBASE

9997020 EMBASE No: 96175709
Arterial gene transfer for therapeutic angiogenesis in patients with peripheral artery disease
Isner J.M.; Walsh K.; Symes J.; Pieczek A.; Takeshita S.; Lowry J.; Rosenfield K.; Weir L.; Brogi E.; Jurayj D.
Human Gene Therapy (USA) , 1996, 7/8 (959-988) CODEN: HGTHE ISSN: 1043-0342
LANGUAGES: English SUMMARY LANGUAGES: English

13/3/46 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

9969349 EMBASE No: 96134187
Therapeutic angiogenesis: A new frontier for vascular therapy
Isner J.M.
Department of Medicine, St Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135-2997 USA
Vascular Medicine (United Kingdom) , 1996, 1/1 (79-87) CODEN: VAMLF ISSN: 1358-863X
LANGUAGES: English SUMMARY LANGUAGES: English

13/3/47 (Item 5 from file: 72)
DIALOG(R)File 72:EMBASE

9823693 EMBASE No: 95367020
Vascular endothelial growth factor in angiogenesis
Isner J.M.
St Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135 USA

Vascular Medicine Review (United Kingdom) , 1995, 6/4 (311-322) CODEN: VMERE ISSN: 0954-2582
LANGUAGES: English

13/3/48 (Item 6 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S. ; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA
American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English

13/3/49 (Item 7 from file: 72)
DIALOG(R)File 72:EMBASE

9598378 EMBASE No: 95166619
Arterial gene therapy for therapeutic angiogenesis in patients with peripheral artery disease
Isner J.M.; Walsh K.; Symes J.; Pieczek A.; Takeshita S.; Lowry J.; Rossow S.; Rosenfield K.; Weir L.; Brogi E.; Schainfeld R.
St Elizabeth's Medical Center, Tufts University School of Medicine, Boston, MA 02135 USA
Circulation (USA) , 1995, 91/11 (2687-2692) CODEN: CIRCA ISSN: 0009-7322
LANGUAGES: English

13/3/50 (Item 8 from file: 72)
DIALOG(R)File 72:EMBASE

9360125 EMBASE No: 94313128
Use of human tissue specimens obtained by directional atherectomy to study restenosis
Isner J.M.; Kearney M.; Bauters C.; Leclerc G.; Nikol S.; Pickering J.G.; Riessen R.; Weir L.
Department of Medicine, St. Elizabeth's Medical Center, Tufts University School of Medicine, Boston, MA 02193 USA
TRENDS CARDIOVASC. MED. (USA) , 1994, 4/5 (213-221) CODEN: TCMDE ISSN: 1050-1738
LANGUAGES: English SUMMARY LANGUAGES: English
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17/3/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13468163 BIOSIS Number: 99468163
Estrogen-receptor-mediated inhibition of human endothelial cell apoptosis: Estradiol as a survival factor
Spyridopoulos I; Sullivan A B; Kearney M; Isner J M; Losordo D W
St. Elizabeth's Med. Cent., Dep. Med., Div. Cardiovascular Res., 736 Cambridge St., Boston, MA 02135, USA
Circulation 95 (6). 1997. 1505-1514.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 009 Ref. 123832

17/3/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13451523 BIOSIS Number: 99451523
Isolation of putative progenitor endothelial cells for angiogenesis
Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; Isner J M
Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston, MA 02135, USA
Science (Washington D C) 275 (5302). 1997. 964-967.
Full Journal Title: Science (Washington D C)
ISSN: 0036-8075
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192

17/3/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13446063 BIOSIS Number: 99446063
Accelerated endothelialization by local delivery of recombinant human VEGF reduces in-stent intimal formation
Van Belle E; Maillard L; Tio F O; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Journal of the American College of Cardiology 29 (2 SUPPL. A). 1997. 77A.
Full Journal Title: 46th Annual Scientific Session of the American College of Cardiology, Anaheim, California, USA, March 16-19, 1997. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 004 Ref. 066915

17/3/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13420082 BIOSIS Number: 99420082
Vascular endothelial growth factor-vascular permeability factor augments nitric oxide release from quiescent rabbit and human vascular endothelium
Van Der Zee R; Murohara T; Luo Z; Zollmann F; Passeri J; Lekutat C; Isner

J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135-2997, USA
Circulation 95 (4). 1997. 1030-1037.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 007 Ref. 092225

17/3/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13393156 BIOSIS Number: 99393156
Hypoxia induces vascular endothelial growth factor in cultured human endothelial cells
Namiki A; Aikawa J; Moroi M; Ishikawa M; Fukazawa M; Yamaguchi T; Isner J M
Third Dep. Intern. Med., Toho Univ. Ohashi Hosp., Tokyo, Japan
Japanese Circulation Journal 60 (7). 1996. 467-468.
Full Journal Title: 60th Annual Scientific Meeting of the Japanese Circulation Society, Osaka, Japan, March 19-21, 1996. Japanese Circulation Journal
ISSN: 0047-1828
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 003 Ref. 039795

17/3/6 (Item 6 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13374929 BIOSIS Number: 99374929
Stent endothelialization: Time course, impact of local catheter delivery, feasibility of recombinant protein administration, and response to cytokine expedition
Van Belle E; Tio F O; Couffinhal T; Maillard L; Passeri J; Isner J M
St. Elizabeth's Medical Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 95 (2). 1997. 438-448.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 005 Ref. 062807

17/3/7 (Item 7 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13334719 BIOSIS Number: 99334719
Direct intramuscular gene transfer of naked DNA encoding vascular endothelial growth factor augments collateral development and tissue perfusion
Tsurumi Y; Takeshita S; Chen D; Kearney M; Rossow S T; Passeri J; Horowitz J R; Symes J F; Isner J M
St. Elizabeth's Med. Cent. Boston, 736 Cambridge St., Boston, MA 02135,

USA
Circulation 94 (12). 1996. 3281-3290.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 003 Ref. 037833

17/3/8 (Item 8 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13331042 BIOSIS Number: 99331042
Accelerated restitution of endothelial integrity and endothelium-dependent function after phVEGF-165 gene transfer
Asahara T; Chen D; Tsurumi Y; Kearney M; Rossow S; Passeri J; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Circulation 94 (12). 1996. 3291-3302.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 003 Ref. 034156

17/3/9 (Item 9 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13305320 BIOSIS Number: 99305320
Stent endothelialization and thrombosis: Time course, impact of local catheter delivery, feasibility of recombinant protein administration, and response to cytokine expedition
Van Belle E; Tio F O; Couffinhal T; Maillard L; Passeri J; Isner J M
St. Elizabeth's Med. Center, Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I697.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 007537

17/3/10 (Item 10 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13304707 BIOSIS Number: 99304707
Arterial gene transfer of naked DNA in patients with critical limb ischemia
Isner J M; Pieczek A; Schainfeld R; Blair R; Haley L; Asahara T; Rosenfield K; Razvi S; Symes J F
St. Elizabeth's Med. Center, Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I591.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996.

Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 006924

17/3/11 (Item 11 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302770 BIOSIS Number: 99302770
Accelerated endothelialization improves stent biocompatibility: Feasibility and effects of VEGF-gene transfer
Van Belle E; Chen D; Tio F O; Maillard L; Passeri J; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I259.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996.
Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004987

17/3/12 (Item 12 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302646 BIOSIS Number: 99302646
Regulation of endothelial cell connexin expression by vascular endothelial cell growth factor
Saffitz J E; Sullivan A; Isner J M
Washington University, St. Louis, MO, USA
Circulation 94 (8 SUPPL.). 1996. I238.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996.
Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004863

17/3/13 (Item 13 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996.
Circulation

ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

17/3/14 (Item 14 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13301846 BIOSIS Number: 99301846
Angiogenesis is impaired in ApoE knock out mice due to reduced expression of vascular endothelial growth factor
Couffinhal T; Silver M; Kearney M; Sullivan A; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I102.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004063

17/3/15 (Item 15 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13282625 BIOSIS Number: 99282625
Re-endothelialization of stented vessels: Time course by morphometric analysis and scanning electron microscopy
Van Belle E; Tio F O; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
European Heart Journal 17 (ABSTR. SUPPL.). 1996. 219.
Full Journal Title: XVIIIth Congress of the European Society of Cardiology, Birmingham, England, UK, August 25-29, 1996. European Heart Journal
ISSN: 0195-668X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 012 Ref. 222272

17/3/16 (Item 16 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13282275 BIOSIS Number: 99282275
Collateral vessel development induced by therapeutic angiogenesis is associated with improvement of tissue perfusion
Van Belle E; Chen D; Bunting S; Ferrara N; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
European Heart Journal 17 (ABSTR. SUPPL.). 1996. 130.
Full Journal Title: XVIIIth Congress of the European Society of Cardiology, Birmingham, England, UK, August 25-29, 1996. European Heart Journal
ISSN: 0195-668X

Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 012 Ref. 221922

17/3/17 (Item 17 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13257733 BIOSIS Number: 99257733
Gene transfer of naked DNA encoding for three isoforms of vascular endothelial growth factor stimulates collateral development in vivo
Takeshita S; Tsurumi Y; Couffinahl T; Asahara T; Bauters C; Symes J; Ferrara N; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
Laboratory Investigation 75 (4). 1996. 487-501.
Full Journal Title: Laboratory Investigation
ISSN: 0023-6837
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 012 Ref. 173363

17/3/18 (Item 18 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13246677 BIOSIS Number: 99246677
Therapeutic angiogenesis following arterial gene transfer of vascular endothelial growth factor in a rabbit model of hindlimb ischemia
Takeshita S; Weir L; Chen D; Zheng L P; Riessen R; Bauters C; Symes J F; Ferrara N; Isner J M
Dep. Med. Surgery Biomedical Res., St. Elizabeth's Med. Cent. Boston, Tufts Univ. Sch. Med., Boston, MA 02135, USA
Biochemical and Biophysical Research Communications 227 (2). 1996. 628-635.
Full Journal Title: Biochemical and Biophysical Research Communications
ISSN: 0006-291X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 011 Ref. 162307

17/3/19 (Item 19 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13196280 BIOSIS Number: 99196280
The role of angiogenic cytokines in cardiovascular disease
Isner J M
Dep. Med., Biomedical Res., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Clinical Immunology and Immunopathology 80 (3 PART 2). 1996. S82-S91.
Full Journal Title: Clinical Immunology and Immunopathology
ISSN: 0090-1229
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 009 Ref. 128287

17/3/20 (Item 20 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13130850 BIOSIS Number: 99130850
Clinical evidence of angiogenesis after arterial gene transfer of phVEGF-165 in patient with ischaemic limb
Isner J M; Pieczek A; Schainfeld R; Blair R; Haley L; Asahara T; Rosenfield K; Razvi S; Walsh K; Symes J F
St. Elizabeth's Med. Cent., Boston, MA 02135, USA
Lancet (North American Edition) 348 (9024). 1996. 370-374.
Full Journal Title: Lancet (North American Edition)
ISSN: 0099-5355
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 006 Ref. 078981

17/3/21 (Item 21 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13092433 BIOSIS Number: 99092433
VEGF improves myocardial blood flow but produces EDRF-mediated hypotension in porcine hearts
Hariawala M D; Horowitz J R; Esakof D; Sheriff D D; Walter D H; Keyt B; Isner J M; Symes J F
Div. Cardiothoracic Surg., Cardiol. Biomedical Res., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Journal of Surgical Research 63 (1). 1996. 77-82.
Full Journal Title: Journal of Surgical Research
ISSN: 0022-4804
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 004 Ref. 057882

17/3/22 (Item 22 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12166592 BIOSIS Number: 98766592
VEGF expression in a mouse model of hind limb ischemia
Couffinhal T; Silver M; Witzenbichler B; Sheriff D D; Isner J M
St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., Boston, MA 02135, USA
FASEB Journal 10 (3). 1996. A578.
Full Journal Title: Experimental Biology 96, Part II, Washington, D.C., USA, April 14-17, 1996. FASEB Journal
ISSN: 0892-6638
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 005 Ref. 083381

17/3/23 (Item 23 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12166394 BIOSIS Number: 98766394
Nitric oxide precursor augments angiogenesis and attenuates endothelial dysfunction in collateral circulation in rabbit ischemic hindlimb in vivo

Asahara T; Bauters C; Wu T; Zheng L P; Chen D; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
FASEB Journal 10 (3). 1996. A545.
Full Journal Title: Experimental Biology 96, Part II, Washington, D.C., USA, April 14-17, 1996. FASEB Journal
ISSN: 0892-6638
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 005 Ref. 083183

17/3/24 (Item 24 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12142043 BIOSIS Number: 98742043
The in vivo bioactivity of vascular endothelial growth factor-vascular permeability factor is independent of N-linked glycosylation
Walter D H; Hink U; Asahara T; Van Belle E; Horowitz J; Tsurumi Y; Vandlen R; Heinsohn H; Keyt B; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Laboratory Investigation 74 (2). 1996. 546-556.
Full Journal Title: Laboratory Investigation
ISSN: 0023-6837
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 009 Ref. 126318

17/3/25 (Item 25 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12119121 BIOSIS Number: 98719121
Successful gene therapy following direct injection of naked DNA encoding secreted protein into skeletal muscle
Tsurumi Y; Takeshita S; Passeri J; Kearney M; Horowitz J R; Symes J F; Isner J M
St. Elizabeth's Med. Center, Tufts niv. Sch. Med., Boston, MA, USA
Journal of the American College of Cardiology 27 (2 SUPPL. A). 1996. 316A.
Full Journal Title: 45th Annual Scientific Session of the American College of Cardiology, Orlando, Florida, USA, March 24-27, 1996. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 004 Ref. 065303

17/3/26 (Item 26 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12117779 BIOSIS Number: 98717779
Accelerated re-endothelialization and reduced neointimal thickening following catheter transfer of phVEGF-165
Asahara T; Chen D; Kearney M; Rossow S; Passeri J; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA

Journal of the American College of Cardiology 27 (2 SUPPL. A). 1996. 1A.
Full Journal Title: 45th Annual Scientific Session of the American College of Cardiology, Orlando, Florida, USA, March 24-27, 1996. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 004 Ref. 063961

17/3/27 (Item 27 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12075790 BIOSIS Number: 98675790
Hypoxia-induced paracrine regulation of vascular endothelial growth factor receptor expression
Brogi E; Schatteman G; Wu T; Kim E A; Varticovski L; Keyt B; Isner J M
Div. Cardiol., St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 97 (2). 1996. 469-476.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 006 Ref. 076071

17/3/28 (Item 28 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768

17/3/29 (Item 29 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation

ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092

17/3/30 (Item 30 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11986061 BIOSIS Number: 98586061
Scatter factor stimulates angiogenesis in a rabbit model of hindlimb ischemia
Van Belle E; Chen D; Zheng L P; Schwall R; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA, USA
Circulation 92 (8 SUPPL.). 1995. I748.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 016179

17/3/31 (Item 31 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11983015 BIOSIS Number: 98583015
Hypoxia-induced paracrine regulation of VEGF receptor expression
Brogi E; Schatteman G; Wu T; Kim E A; Varticovski L; Keyt B; Isner J M
Dep. Med. Biomed. Res., St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA, USA
Circulation 92 (8 SUPPL.). 1995. I113.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 013133

17/3/32 (Item 32 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11983012 BIOSIS Number: 98583012
Hypoxia induces vascular endothelial growth factor mRNA expression and protein production in human endothelial cells in vitro
Namiki A; Brogi E; Kearney M; Kim E A; Wu T; Varticovski L; Isner J M
Third Dep. Int. Med., Toho University Ohashi Hospital, Tokyo, Japan
Circulation 92 (8 SUPPL.). 1995. I112.
Full Journal Title: 68th Scientific Session of the American Heart Association, Anaheim, California, USA, November 13-16, 1995. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 001 Ref. 013130

17/3/33 (Item 33 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11863926 BIOSIS Number: 98463926
Gene therapy for the vulnerable plaque
Feldman L J; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Journal of the American College of Cardiology 26 (3). 1995. 826-835.
Full Journal Title: Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 009 Ref. 129983

17/3/34 (Item 34 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11733542 BIOSIS Number: 98333542
Recovery of disturbed endothelium-dependent flow in the collateral-perfused rabbit ischemic hindlimb after administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 91 (11). 1995. 2802-2809.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 041266

17/3/35 (Item 35 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11733541 BIOSIS Number: 98333541
Local delivery of vascular endothelial growth factor accelerates reendothelialization and attenuates intimal hyperplasia in balloon-injured rat carotid artery
Asahara T; Bauters C; Pastore C; Kearney M; Rossow S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 91 (11). 1995. 2793-2801.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 041265

17/3/36 (Item 36 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11693792 BIOSIS Number: 98293792

` Physiologic assessment of angiogenesis by arterial gene therapy with vascular endothelial growth factor
Isner J M; Takeshita S; Bauters C; Asahara T; Zheng L P; Russow S T; Kearney M; Barry J J; Ferrara N; Symes J F
Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA 02135, USA
Journal of Cellular Biochemistry Supplement 0 (21A). 1995. 378.
Full Journal Title: Keystone Symposium on Gene Therapy and Molecular Medicine, Steamboat Springs, Colorado, USA, March 26-April 1, 1995. Journal of Cellular Biochemistry Supplement
ISSN: 0733-1959
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 007 Ref. 114485

17/3/37 (Item 37 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11639861 BIOSIS Number: 98239861
Site-specific therapeutic angiogenesis after systemic administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., Suite 306, 11 Nevins St., Boston, MA 02135, USA
Journal of Vascular Surgery 21 (2). 1995. 314-325.
Full Journal Title: Journal of Vascular Surgery
ISSN: 0741-5214
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 011 Ref. 162037

17/3/38 (Item 38 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11620005 BIOSIS Number: 98220005
Expression of gax, a growth arrest homeobox gene, is rapidly down-regulated in the rat carotid artery during the proliferative response to balloon injury
Weir L; Chen D; Pastore C; Isner J M; Walsh K
Dep. Cardiol., St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 01748, USA
Journal of Biological Chemistry 270 (10). 1995. 5457-5461.
Full Journal Title: Journal of Biological Chemistry
ISSN: 0021-9258
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 010 Ref. 142181

17/3/39 (Item 39 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11559892 BIOSIS Number: 98159892
Restoration of endothelial function in hypercholesterolemic rabbit by intermittent administration of vascular endothelial growth factor

• Asahara T; Bauters C; Wu T; Zheng L P; Chen D; Kearney M; Rossow S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1995. 366A.
Full Journal Title: 44th Annual Scientific Session of the American College of Cardiology, New Orleans, Louisiana, USA, March 19-22, 1995. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 004 Ref. 062613

17/3/40 (Item 40 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11453686 BIOSIS Number: 98053686
Intramuscular administration of vascular endothelial growth factor induces dose-dependent collateral artery augmentation in a rabbit model of chronic limb ischemia
Takeshita S; Pu L-Q; Stein L A; Sniderman A D; Bunting S; Ferrara N; Isner J M; Symes J F
Div. Cardiothoracic Surgery, St. Elizabeth's Med. Cent., 736 Cambridge St., Boston, MA 02135, USA
Circulation 90 (5 PART 2). 1994. II228-II234.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 003 Ref. 038230

17/3/41 (Item 41 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11431809 BIOSIS Number: 98031809
Synergism between vascular endothelial growth factor and basic fibroblast growth factor in the induction of angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Isner J M; Symes J F
Dep. Med., St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
Surgical Forum 45 (0). 1994. 358-360.
Full Journal Title: Surgical Forum
ISSN: 0071-8041
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 002 Ref. 016353

17/3/42 (Item 42 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11426374 BIOSIS Number: 98026374
Physiologic assessment of angiogenesis induced by vascular endothelial growth factor in a rabbit ischaemic hindlimb
Bauters C; Asahara T; Takeshita S; Zheng L P; Bunting S; Ferrara N; Symes J F; Isner J M

St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
European Heart Journal 15 (ABSTR. SUPPL.). 1994. 19.
Full Journal Title: Joint XIIth World Congress of Cardiology and the XVIth Congress of the European Society of Cardiology, Berlin, Germany, September 10-14, 1994. European Heart Journal
ISSN: 0195-668X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 013880

17/3/43 (Item 43 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11424310 BIOSIS Number: 98024310
In vivo synergistic effects of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in rabbit ischemic hindlimb
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Med. Sch., Boston, MA
Circulation 90 (4 PART 2). 1994. I585.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 011816

17/3/44 (Item 44 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11423272 BIOSIS Number: 98023272
Site-specific therapeutic angiogenesis following systemic intravenous administration of vascular endothelial growth factor
Bauters C; Asahara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 90 (4 PART 2). 1994. I393.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 010778

17/3/45 (Item 45 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11421639 BIOSIS Number: 98021639
Physiologic assessment of angiogenesis by arterial gene therapy with vascular endothelial growth factor
Takeshita S; Bauters C; Asahara T; Zheng L P; Rossow S T; Kearney M; Barry J J; Ferrara N; Symes J F; Isner J M

St. Elizabeth's Med. Cent., Tufts Univ. Sch. Med., Boston, MA, USA
Circulation 90 (4 PART 2). 1994. I90.
Full Journal Title: 67th Scientific Sessions of the American Heart Association, Dallas, Texas, USA, November 14-17, 1994. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 001 Ref. 009145

17/3/46 (Item 46 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11405080 BIOSIS Number: 98005080
Arterial gene transfer to rabbit endothelial and smooth muscle cells using percutaneous delivery of an adenoviral vector
Steg P G; Feldman L J; Scoazec J-Y; Tahlil O; Barry J J; Boulechfar S; Ragot T; Isner J M; Perricaudet M
Serv. Cardiol., Hopital Bichat, 46 rue Henri Huchard, 75018 Paris, France
Circulation 90 (4). 1994. 1648-1656.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 001 Ref. 005080

17/3/47 (Item 47 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11402027 BIOSIS Number: 98002027
Physiological assessment of augmented vascularity induced by VEGF in ischemic rabbit hindlimb
Bauters C; Ashara T; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
American Journal of Physiology 267 (4 PART 2). 1994. H1263-H1271.
Full Journal Title: American Journal of Physiology
ISSN: 0002-9513
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 001 Ref. 002027

17/3/48 (Item 48 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11249068 BIOSIS Number: 97449068
Indirect angiogenic cytokines upregulate VEGF and bFGF gene expression in vascular smooth muscle cells, whereas hypoxia upregulates VEGF expression only
Brogi E; Wu T; Namiki A; Isner J M
St. Elizabeth's Med. Center, 736 Cambridge St., Boston, MA 02135, USA
Circulation 90 (2). 1994. 649-652.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH

Print Number: Biological Abstracts Vol. 098 Iss. 008 Ref. 103380

17/3/49 (Item 49 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11016288 BIOSIS Number: 97216288
Physiologic assessment of angiogenesis induced by a single intra-arterial bolus of vascular endothelial growth factor in the rabbit ischemic hindlimb
Bauters C; Asahara T; Takeshita S; Zheng L P; Horowitz J; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1994. 380A.
Full Journal Title: 43rd Annual Scientific Session of the American College of Cardiology, Atlanta, Georgia, USA, March 13-17, 1994. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 005 Ref. 079280

17/3/50 (Item 50 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11016124 BIOSIS Number: 97216124
Angiogenesis induced in vivo following site-specific administration of vascular endothelial growth factor (VEGF) is potentiated by systemic administration of heparin
Asahara T; Takeshita S; Zheng L P; Bauters C; Horowitz J; Bunting S; Ferrara N; Symes J; Isner J M
St. Elizabeth's Hosp., Tufts Med. Sch., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1994. 338A.
Full Journal Title: 43rd Annual Scientific Session of the American College of Cardiology, Atlanta, Georgia, USA, March 13-17, 1994. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 005 Ref. 079116

17/3/51 (Item 51 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11015950 BIOSIS Number: 97215950
In vivo evidence that vascular endothelial growth factor stimulates collateral formation by inducing arterial cell proliferation in a rabbit ischemic hindlimb
Takeshita S; Kearney M; Loushin C; Brogi E; Zheng L P; Horowitz J; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Tufts Univ., Boston, MA, USA
Journal of the American College of Cardiology 0 (SPEC. ISSUE). 1994.

294A.
Full Journal Title: 43rd Annual Scientific Session of the American College of Cardiology, Atlanta, Georgia, USA, March 13-17, 1994. Journal of the American College of Cardiology
ISSN: 0735-1097
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 005 Ref. 078942

17/3/52 (Item 52 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

17/3/53 (Item 53 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10858288 BIOSIS Number: 97058288
The role of vascular endothelial growth factor in revascularizing the ischemic limb: Serial angiographic follow-up of collateral formation
Asahara T; Takeshita S; Zheng L P; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I656.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 016716

17/3/54 (Item 54 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10857327 BIOSIS Number: 97057327
In vivo evidence of enhanced angiogenesis following direct arterial gene transfer of the plasmid encoding vascular endothelial growth factor
Takeshita S; Zheng L P; Asahara T; Riessen R; Brogi E; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I476.
Full Journal Title: 66th Scientific Sessions of the American Heart

Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 015755

17/3/55 (Item 55 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10856751 BIOSIS Number: 97056751
Therapeutics angiogenesis: A single intra-arterial bolus of vascular endothelial growth factor augments collateral vessel formation in a rabbit ischemic hindlimb
Takeshita S; Zheng L P; Asahara T; Pu L-Q; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Hosp., Tufts Univ., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I370.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 015179

17/3/56 (Item 56 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10856503 BIOSIS Number: 97056503
Transforming growth factor-beta 1 increases the expression of vascular endothelial growth factor in human arterial smooth muscle cells
Brogi E; Ferrara N; Isner J M
St. Elizabeth's Hosp., Tufts Univ. Sch. Med., Boston, MA, USA
Circulation 88 (4 PART 2). 1993. I324.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 014931

17/3/57 (Item 57 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10855546 BIOSIS Number: 97055546
Vascular endothelial growth factor induces dose-dependent revascularization in a rabbit model of persistent limb ischemia
Pu L-Q; Ferrara N; Stein L A; Sniderman A D; Isner J M; Symes J F
McGill Univ., Montreal, CAN
Circulation 88 (4 PART 2). 1993. I147.
Full Journal Title: 66th Scientific Sessions of the American Heart Association, Atlanta, Georgia, USA, November 8-11, 1993. Circulation
ISSN: 0009-7322

Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 046 Iss. 002 Ref. 013974

17/3/58 (Item 58 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10508463 BIOSIS Number: 96108463
INHIBITION OF ENDOTHELIUM-DEPENDENT VASORELAXATION BY SICKLE ERYTHROCYTES
MOSSERI M; BARTLETT-PANDITE A N; WENC K; ISNER J M; WEINSTEIN R
ST. ELIZABETH'S HOSP., 736 CAMBRIDGE ST., BOSTON, MA 02135, USA.
AM HEART J 126 (2). 1993. 338-346. CODEN: AHJOA
Full Journal Title: American Heart Journal
Language: ENGLISH

17/3/59 (Item 59 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7439389 BIOSIS Number: 89090408
ATHEROSCLEROTIC YUCATAN MICROSWINE AN ANIMAL MODEL WITH HIGH-GRADE FIBROCALCIFIC NONFATTY LESIONS SUITABLE FOR TESTING CATHETER-BASED INTERVENTIONS
GAL D; RONGIONE A J; SLOVENKAI G A; DEJESUS S T; LUCAS A; FIELDS C D; ISNER J M
ST. ELIZABETH'S HOSP., 736 CAMBRIDGE ST., BOSTON, MASS. 02135.
AM HEART J 119 (2 PART 1). 1990. 291-300. CODEN: AHJOA
Full Journal Title: American Heart Journal
Language: ENGLISH

17/3/60 (Item 60 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7368607 BIOSIS Number: 89019626
VASCULAR SPASM COMPLICATES CONTINUOUS WAVE BUT NOT PULSED LASER IRRADIATION
GAL D; SEG G; RONGIONE A J; DEJESUS S T; CLARKE R H; ISNER J M
ST. ELIZABETH'S HOSP., 736 CAMBRIDGE ST., BOSTON, MA 02135.
AM HEART J 118 (5 PART 1). 1989. 934-941. CODEN: AHJOA
Full Journal Title: American Heart Journal
Language: ENGLISH

17/3/61 (Item 61 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7159447 BIOSIS Number: 88082192
PULSED UV LASER IRRADIATION PRODUCES ENDOTHELIUM-INDEPENDENT RELAXATION OF VASCULAR SMOOTH MUSCLE
STEG P G; RONGIONE A J; GAL D; DEJESUS S T; CLARKE R H; ISNER J M
DEP. BIOMED. RES., ST. ELIZABETH'S HOSP., 736 CAMBRIDGE ST., BOSTON, MASS. 02135.

CIRCULATION 80 (1). 1989. 189-197. CODEN: CIRCA
Full Journal Title: Circulation
Language: ENGLISH

17/3/62 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

10303190 EMBASE No: 97114821
Estradiol accelerates functional endothelial recovery after arterial injury
Krasinski K.; Spyridopoulos I.; Asahara T.; Van der Zee R.; Isner J.M.; Losordo D.W.
USA
Circulation (USA) , 1997, 95/7 (1768-1772) CODEN: CIRCA ISSN: 0009-7322
DOCUMENT TYPE: Journal
LANGUAGES: English SUMMARY LANGUAGES: English
NUMBER OF REFERENCES: 16

17/3/63 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

9997021 EMBASE No: 96175710
Arterial gene therapy for restenosis
Isner J.M.; Walsh K.; Rosenfield K.; Schainfeld R.; Asahara T.; Hogan K.; Pieczek R.N.
Human Gene Therapy (USA) , 1996, 7/8 (989-1011) CODEN: HGTHE ISSN: 1043-0342
LANGUAGES: English SUMMARY LANGUAGES: English

17/3/64 (Item 3 from file: 72)
DIALOG(R)File 72:EMBASE

9997020 EMBASE No: 96175709
Arterial gene transfer for therapeutic angiogenesis in patients with peripheral artery disease
Isner J.M.; Walsh K.; Symes J.; Pieczek A.; Takeshita S.; Lowry J.; Rosenfield K.; Weir L.; Brogi E.; Jurayj D.
Human Gene Therapy (USA) , 1996, 7/8 (959-988) CODEN: HGTHE ISSN: 1043-0342
LANGUAGES: English SUMMARY LANGUAGES: English

17/3/65 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

9969349 EMBASE No: 96134187
Therapeutic angiogenesis: A new frontier for vascular therapy
Isner J.M.
Department of Medicine, St Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135-2997 USA

Vascular Medicine (United Kingdom) , 1996, 1/1 (79-87) CODEN: VAMLF
ISSN: 1358-863X
LANGUAGES: English SUMMARY LANGUAGES: English

17/3/66 (Item 5 from file: 72)
DIALOG(R)File 72:EMBASE

9823693 EMBASE No: 95367020
Vascular endothelial growth factor in angiogenesis
Isner J.M.
St Elizabeth's Medical Center, Tufts University School of Medicine, 736 Cambridge Street, Boston, MA 02135 USA
Vascular Medicine Review (United Kingdom) , 1995, 6/4 (311-322) CODEN: VMERE ISSN: 0954-2582
LANGUAGES: English

17/3/67 (Item 6 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S.; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA
American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English

17/3/68 (Item 7 from file: 72)
DIALOG(R)File 72:EMBASE

7363448 EMBASE No: 89079596
Effect of pulsed excimer laser on arterial smooth muscle
EFFET DU LASER PULSE A EXCIMERES SUR LE MUSCLE LISSE ARTERIEL
Steg P.G.; Rongione A.J.; Gal D.; Dejesus S.T.; Isner J.M.
Service de Cardiologie, Hopital Bichat, 75018 Paris France
ARCH. MAL. COEUR VAISS. (France) , 1989, 82/2 (269-274) CODEN: AMCVA
LANGUAGES: French SUMMARY LANGUAGES: English

17/3/69 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08402702 95277915
Arterial gene therapy for therapeutic angiogenesis in patients with peripheral artery disease [news]
Isner JM; Walsh K; Symes J; Pieczek A; Takeshita S; Lowry J; Rossow S; Rosenfield K; Weir L; Brogi E; et al

Circulation (UNITED STATES) Jun 1 1995, 91 (11) p2687-92, ISSN 0009-7322 Journal Code: DAW
Languages: ENGLISH
Document type: NEWS
?

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e isner/in
  * The files listed above are temporarily unavailable.
FILE 'USPAT' ENTERED AT 13:07:12 ON 16 JUN 1997
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                W E L C O M E   T O   T H E                  *
  *          U. S.   P A T E N T   T E X T   F I L E            *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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E#      FILE            FREQUENCY  TERM
--      ----            ---------  ----
E1      USPAT                24     ISNARDI, MICHAEL A/IN
E2      USPAT                 2     ISNARDON, GERALD/IN
E3      USPAT                 0 --> ISNER/IN
E4      USPAT                 1     ISNER, ANDREW B/IN
E5      USPAT                 6     ISNER, JEFFREY M/IN
E6      USPAT                 3     ISNER, ROBERT E/IN
E7      USPAT                 1     ISNER, WILLIAM G/IN
E8      USPAT                 1     ISO AHO, KALEVI/IN
E9      USPAT                 1     ISO, AKIO/IN
E10     USPAT                 1     ISO, BASARIC/IN
E11     USPAT                 1     ISO, HARUO/IN
E12     USPAT                 1     ISO, KEN ICHI/IN
=> s e5
L1            6 "ISNER, JEFFREY M"/IN
=> d l1 1-6

1.  5,368,034, Nov. 29, 1994, Method and apparatus for thrombolytic
therapy; **Jeffrey M. Isner**, 128/660.03, 661.09, 662.04, 691 [IMAGE
AVAILABLE]

2.  5,106,386, Apr. 21, 1992, Catheter; **Jeffrey M. Isner**, et al.,
606/15 [IMAGE AVAILABLE]

3.  5,104,393, Apr. 14, 1992, Catheter; **Jeffrey M. Isner**, et al.,
606/15 [IMAGE AVAILABLE]

4.  4,997,431, Mar. 5, 1991, Catheter; **Jeffrey M. Isner**, et al.,
606/15 [IMAGE AVAILABLE]

5.  4,985,028, Jan. 15, 1991, Catheter; **Jeffrey M. Isner**, et al.,
606/15 [IMAGE AVAILABLE]

6.  4,862,886, [illegible] 1989 Laser angioplasty; Richard H. Clarke, et
al., 606/7; 37                                          MAGE AVAILABLE]
=> s endothel?
          482[illegible]
           799 [illegible]
         80286 STEM
          1139 PROGENITOR?
L2           1 ENDOTHEL?(P)(ANGIOGEN?)(P)(STEM OR PROGENITOR?)
=> d l2 1

1.  5,459,250, Oct. 17, 1995, Truncated mammalian growth factor DNA
sequence; Claudio Basilico, et al., 536/23.5; 530/399 [IMAGE AVAILABLE]
=> d l2 1 kwic

US PAT NO:     5,459,250 [IMAGE AVAILABLE]              L2: 1 of 1
```

SUMMARY:

BSUM(6)

Among . . . and 3), required for growth and differentiation of lymphocytes, and colony stimulating factors (CSF), promoting growth and differentiation of hematopoietic **stem** cells; (4) **angiogenic** (literally "blood-vessel-forming") growth factors, such as the fibroblast growth factors (FGF) believed to promote growth and organization of **endothelial** cells into new blood vessels; (5) miscellaneous growth factors released by tumor cells.

```
=> s endothel?(p)(stem or progenitor?) and angiogen?
          4828 ENDOTHEL?
         80286 STEM
          1139 PROGENITOR?
           114 ENDOTHEL?(P)(STEM OR PROGENITOR?)
           799 ANGIOGEN?
L3            9 ENDOTHEL?(P)(STEM OR PROGENITOR?) AND ANGIOGEN?
=> d l3 1-9
```

1. 5,631,237, May 20, 1997, Method for producing in vivo delivery of therapeutic agents via liposomes; Victor J. Dzau, et al., 514/44; 264/4.1, 4.3, 4.6; 424/417, 450; 428/402.2

2. 5,576,206, Nov. 19, 1996, Human papilloma virus genes and their use in gene therapy; Richard Schlegel, 435/371, 320.1 [IMAGE AVAILABLE]

3. 5,470,878, Nov. 28, 1995, Cell signaling inhibitors; John Michnick, et al., 514/558, 258, 262, 274, 299, 315, 418, 425, 529, 552, 561, 613, 617, 626, 629, 669; 544/254, 285, 301; 546/183, 243; 548/486, 556 [IMAGE AVAILABLE]

4. 5,466,596, Nov. 14, 1995, Tissue specific transcriptional regulatory element; Martin L. Breitman, et al., 435/354, 69.1, 70.3; 536/24.1 [IMAGE AVAILABLE]

5. 5,459,250, Oct. 17, 1995, Truncated mammalian growth factor DNA sequence; Claudio Basilico, et al., 536/23.5; 530/399 [IMAGE AVAILABLE]

6. 5,376,542, Dec. 27, 1994, Method for producing immortalized cell lines using human papilluma virus genes; Richard Schlegal, 435/172.2, 172.3; 935/62, 71, 93 [IMAGE AVAILABLE]

7. 5,332,671, Jul. 26, 1994, Production of vascular endothelial cell growth factor and DNA encoding same; Napoleone Ferrara, et al., 435/360, 69.4, 69.6, 320.1; 536/23.5, 23.51 [IMAGE AVAILABLE]

8. 5,100,668, Mar. 31, 1992, Controlled release systems containing heparin and growth factors; Elazer R. Edelman, et al., 424/422, 423, 426, 484, 485, 488; 530/399, 813, 815, 816; 536/51 [IMAGE AVAILABLE]

9. 4,808,402, Feb. 28, 1989, Method and compositions for modulating neovascularization; Samuel J. Leibovich, et al., 424/78.06, 85.1, 423, 618; 514/2, 8, 21 [IMAGE AVAILABLE]

```
=> d l3 1-9 date
```

TITLE: Method for producing in vivo delivery of therapeutic agents via liposomes
US PAT NO: 5,631,237 DATE ISSUED: May 20, 1997
APPL-NO: 08/241,372 DATE FILED: May 10, 1994
REL-US-DATA: Continuation-in-part of Ser. No. 995,022, Dec. 22, 1992, abandoned.

L3: 2 of 9

TITLE: Human papilloma virus genes and their use in gene therapy
US PAT NO: 5,576,206 DATE ISSUED: Nov. 19, 1996
[IMAGE AVAILABLE]
APPL-NO: 08/246,704 DATE FILED: May 20, 1994
REL-US-DATA: Division of Ser. No. 874,397, Apr. 27, 1992, Pat. No. 5,376,542.

L3: 3 of 9

TITLE: Cell signaling inhibitors
US PAT NO: 5,470,878 DATE ISSUED: Nov. 28, 1995
[IMAGE AVAILABLE]
APPL-NO: 08/164,081 DATE FILED: Dec. 8, 1993
REL-US-DATA: Continuation-in-part of Ser. No. 40,820, Mar. 31, 1993, abandoned.

L3: 4 of 9

TITLE: Tissue specific transcriptional regulatory element
US PAT NO: 5,466,596 DATE ISSUED: Nov. 14, 1995
[IMAGE AVAILABLE]
APPL-NO: 07/934,393 DATE FILED: Aug. 25, 1992

L3: 5 of 9

TITLE: Truncated mammalian growth factor DNA sequence
US PAT NO: 5,459,250 DATE ISSUED: Oct. 17, 1995
[IMAGE AVAILABLE]
APPL-NO: 08/187,780 DATE FILED: Jan. 25, 1994
REL-US-DATA: Continuation of Ser. No. 901,705, Jun. 22, 1992, abandoned, which is a continuation-in-part of Ser. No. 806,771, Dec. 6, 1991, which is a continuation of Ser. No. 177,506, Apr. 4, 1988, abandoned, which is a continuation of Ser. No. 62,925, Jun. 16, 1987, abandoned.

L3: 6 of 9

TITLE: Method for producing immortalized cell lines using human papilluma virus genes
US PAT NO: 5,376,542 DATE ISSUED: Dec. 27, 1994
[IMAGE AVAILABLE]
APPL-NO: 07/874,397 DATE FILED: Apr. 27, 1992

L3: 7 of 9

TITLE: Production of vascular endothelial cell growth factor and DNA encoding same
US PAT NO: 5,332,671 DATE ISSUED: Jul. 26, 1994
[IMAGE AVAILABLE]
APPL-NO: 07/389,722 DATE FILED: Aug. 4, 1989
REL-US-DATA: Continuation-in-part of Ser. No. 369,424, Jun. 21, 1989, abandoned, which is a continuation-in-part of Ser. No. 351,117, May 12, 1989, abandoned.

L3: 8 of 9

TITLE: Controlled release systems containing heparin and growth factors

US PAT NO: 5,100,668 [IMAGE AVAILABLE] DATE ISSUED: Mar. 31, 1992

APPL-NO: 07/206,520 DATE FILED: Jun. 14, 1988

L3: 9 of 9

TITLE: Method and compositions for modulating neovascularization

US PAT NO: 4,808,402 [IMAGE AVAILABLE] DATE ISSUED: Feb. 28, 1989

APPL-NO: 07/056,554 DATE FILED: May 29, 1987

=> d l3 1-9 kwic

US PAT NO: 5,631,237 L3: 1 of 9

SUMMARY:

BSUM(6)

One . . . There are also several systemic-physiological problems that can lead to degradation of the cardiovascular system, among these are atherosclerosis, hypertension, **angiogenesis**, myocardial hypertrophy, and vascular smooth muscle cell (VSMC) hypertrophy. For example, in the case of chronic hypertension, it is thought. . .

SUMMARY:

BSUM(7)

Research . . . and the production of abundant extracellular matrix. In similar fashion, restenosis after angioplasty, vein bypass graft stenosis, prosthetic graft stenosis, **angiogenesis** and hypertension all involve abnormalities in vascular cell growth, migration and matrix composition. The precise mechanisms responsible for alterations in. . .

DETDESC:

DETD(11)

The . . . solid tissue, mobile cells, particularly hematopoietic cells, normal cells, abnormal cells, e.g. neoplastic cells, psoriatic cells, neoproliferative cells, mature cells, **progenitor** cells, **stem** cells, **endothelial** cells, epithelial cells, stromal cells, neuronal cells, mucosal cells, cutaneous cells, vascular smooth muscle cells, hepatic cells, Kuppfer cells, etc., with the exclusion of cells of the reticular **endothelial** system, particularly macrophages or other cells which are naturally phagocytic. Organs which may be involved include the vasculature, heart, pancreas,. . .

DETDESC:

DETD(26)

Those . . . hypertension, restenosis after angioplasty, stenosis, hyperplasia after grafting, hyperplasia after insertion of a stent, trauma associated with bypass surgery, atherosclerosis, **angiogenesis**, myocardial hypertrophy, vascular smooth muscle cell hypertrophy, strokes

and aneurysms.

DETDESC:

DETD(136)

The pathophysiology of neointimal hyperplasia is complex and involves multiple biologically active mediators and modulators including thrombin, PDGF, bFGF, and **angiogenin**, etc. For example, factors such as FGF and PDGF stimulate smooth muscle cell proliferation and migration, which is a central. . .

US PAT NO: 5,576,206 [IMAGE AVAILABLE] L3: 2 of 9

DETDESC:

DETD(23)

In addition to epithelial cells, non-epithelial cells such as **endothelial** cells, fibroblasts, muscle cells, bone cells, cartilage cells and brain tissue cells (neurons, glial cells, etc.) can also be immortalized using the method of the present invention. Further, hematopoietic cells such as red blood cell **progenitor** cells, white blood cell **progenitor** cells and megakariocytes can all be immortalized. These immortalized hematopoietic cells can be reintroduced into a host mammal during gene. . .

DETDESC:

DETD(37)

For . . . histocompatibility (HLA) antigens to initiate an immune rejection of the tumor, or alternatively secrete agents which would interfere with further **angiogenesis**, such as growth factor receptor-blocking peptides.

US PAT NO: 5,470,878 [IMAGE AVAILABLE] L3: 3 of 9

SUMMARY:

BSUM(22)

A disease state or treatment-induced toxicity are selected from the group consisting of: tumor progression involving tumor stimulation of blood supply (**angiogenesis**) by production of fibroblst growth factor (FGF), vascular endothelial growth factor (VEGF) or platelet-derived growth factor (PDGF); tumor invasion and. . .

DETDESC:

DETD(45)

The . . . of stimulating said proliferation and said amount is sufficient to inhibit said proliferation; (6) lower systemic vascular resistance conferred by **endothelial** cells and said amount is sufficient to reduce the release of hypertension-inducing substances; (7) lower systemic vascular resistance induced by **endothelial** cells and said amount is sufficient to enhance the release of anti-hypertensive

substances; (8) lower expression of adhesion molecules induced. . . TNF, or endotoxin treated megakaryocytes, fibroblastic cells, and macrophages; (14) prevent the down-regulation of receptors for cytokines in TNF-treated hematopoietic **progenitor** cells and said amount is sufficient to prevent said down-regulation; (15) suppress the production of metalloproteases in IL-1-stimulated or TNF-stimulated. . .

DETDESC:

DETD(46)

The . . . (epidermal growth factor), TGFB (transforming growth factor) and PDGF (platelet derived growth factor) effects in vivo, such as inhibition of **angiogenesis** or restenosis. For example, Ferns et al. (Science (1991) 253:1129) have shown that neointimal smooth muscle chemotaxis and angioplasty are. . .

DETDESC:

DETD(85)

The . . . smooth muscle cells in response to growth factors capable of stimulating said proliferation (6) lower systemic vascular resistance conferred by **endothelial** cells, (7) lower systemic vascular resistance induced by **endothelial** cells, (8) lower expression of adhesion molecules induced by enhancers thereof, (9) suppress the activation of T-cells and macrophages by. . . TNF, or endotoxin treated megakaryocytes, fibroblastic cells, and macrophages; (14) prevent the down-regulation of receptors for cytokines in TNF-treated hematopoietic **progenitor** cells, (15) suppress the production of metalloproteases in IL-1-stimulated or TNF-stimulated glomerular epithelial cells or synovial cells, (16) enhance the. . .

DETDESC:

DETD(207)

In . . . proliferation. Disregulated PDGF-proliferative response has been linked to a variety of diseases, including, e.g., restenosis, atherosclerosis, fibrosis, and tumor cell **angiogenesis**. Cells were plated in low serum-containing medium for 24 hours prior to stimulation with various concentrations of inventive compound no.. . .

DETDESC:

DETD(215)

Another . . . occlusion in atherogenesis and restenosis and plays a role in autocrine and paracrine stimulation of tumor cells and tumor cell-induced **angiogenesis**. In this assay, cells were grown in reduced serum (0.5% fetal calf serum) for 24 hours prior to stimulating with. . .

DETDESC:

DETD(219)

This . . . hours prior to stimulating with various concentrations of

VEGF. VEGF has been shown to be important in tumor cell- mediated **angiogenesis**. Compound no. 58, at 5 .mu.M, inhibited VEGF-induced proliferation at all concentrations of VEGF tested, as shown in FIG. 22.

DETDESC:

DETD(221)

This . . . used to investigate inhibition of vascular cell adhesion molecule (VCAM) expression on HUVEC by compound no. 58. VCAM expression by **endothelial** cells is an early event in atherogenesis and multiple sclerosis, among other various autoimmune diseases. FIG. 23 is a series. . . frequency histogram obtained from flow cytometric analysis of HUVEC cells stained with an antibody directed against VCAM and a second **stem** goat anti-mouse-FITC antibody. In the absence of TNF, VCAM expression on HUVEC is at a very low level. The middle. . .

DETDESC:

DETD(231)

This . . . proliferation. Disregulated PDGF-proliferative response has been linked to a variety of diseases, including, e.g., restenosis, atherosclerosis, fibrosis, and tumor cell **angiogenesis**. Cells were plated in low serum-containing medium for 24 hours prior to stimulation with various concentrations of inventive compounds nos.. . .

US PAT NO: 5,466,596 [IMAGE AVAILABLE] L3: 4 of 9

SUMMARY:

BSUM(7)

The present inventors have identified a transcriptional regulatory element characterized by **endothelial** specific expression. The element is expressed in cells of the **endothelial** lineage including mature and **progenitor** cells. This is the first report of a transcriptional regulatory element which is capable of directing expression specifically in cells of the **endothelial** lineage.

DETDESC:

DETD(3)

In the adult and all stages of embryonic development examined, tek expression was found to be restricted to cells of the **endothelial** lineage. Specifically, in situ hybridization analysis of adult tissues, as well as sectioned and whole mount embryos, showed that tek is specifically expressed in the endocardium, the leptomeninges and the **endothelial** lining of the vasculature from the earliest stages of their development. Moreover, examination of the morphology of tek-expressing cells, and staging of tek expression relative to that of the **endothelial** cell marker von Willebrand factor, revealed that tek is expressed prior to von Willebrand factor and appears to mark the embryonic **progenitors** of mature **endothelial** cells.

DETDESC:

DETD(4)

The . . . identified a transcriptional regulatory element located upstream of tek which specifically directs expression of a gene in cells of the **endothelial** lineage. The transcriptional regulatory element has been found to direct expression in both mature and **progenitor** **endothelial** cells.

DETDESC:

DETD(10)

The . . . a reporter gene or a gene encoding a substance which has toxic or therapeutic activity including a factor which modulates **angiogenesis**. Examples of reporter genes, factors which modulate **angiogenesis**, and substances with toxic or therapeutic activity are discussed below.

DETDESC:

DETD(23)

The . . . of the endothelial lineage. In particular, the invention provides a mechanism for investigating vascularization of tumors and the control of **angiogenesis**. A transgenic mammal may be produced which expresses a substance exclusively in cells of the endothelial lineage. A comparison of. . .

DETDESC:

DETD(24)

Substance which may modulate the **angiogenic** process (herein also referred to as **angiogenic** factors) may be tested using the above described method. Examples of such substances include substances derived from human and animal. . . neovascularization in vivo including factors which are associated with the vascularization that permits tumor growth; substances which are inhibitors of **angiogenesis** such as transforming growth factor .beta., tumor necrosis factor .alpha., human platelet factor 4 (PF4) and .alpha. interferon; substances which. . . other proteins such as protamine which has demonstrated angiostatic properties. For a review of factors which play a role in **angiogenesis** see Maione T. E. and R. J. Sharpe, TIPS, November 1990 Vol. 11 page 457.

DETDESC:

DETD(25)

The . . . and accordingly, the transcriptional regulatory element of the invention may be used to target therapeutic agents including anticoagulants, vasodilator, and **angiogenic** factors (see above discussion) to endothelial cells found at diseased sites. Thus, genetic modification of endothelial cells utilizing the transcriptional. . .

DETDESC:

DETD(77)

Expression of Tek in **Endothelial** Cell **Progenitors**

DETDESC:

DETD(78)

The . . . and 8.5 in focal regions thought to represent developing blood vessels raised the possibility that tek might be expressed in **endothelial** cell **progenitors**. Indeed, close inspection of hybridized sections from 8 to 8.5 day embryos revealed that while the expression of tek in the maternal decidua is restricted to cells of an **endothelial** cell morphology, tek expressing cells in the embryo are of two morphologically distinct cell types. In the developing blood islands. . . of the yolk sac, where tek expression is first detected, silver grains are localized predominantly to elongated cells with characteristic **endothelial** cell morphology (FIG. 7C). In contrast, within the cephalic mesenchyme, silver grains are frequently observed over large, round cells that,. . . during avian embryogenesis (Pardanaud et al., 1987; Coffin & Poole, 1988; Noden, 1989; Noden, 1991), correspond to angioblasts, the presumptive **progenitor** of **endothelial** cells (FIG. 7F). Both cell types are observed in the developing endocardium (FIG. 7I) which, at later stages, is known to contain only fully mature **endothelial** cells.

DETDESC:

DETD(81)

FIG. . . . factor, these observations, together with those on the morphology of tek-expressing cells, suggest that tek is expressed in both mature **endothelial** cells and their **progenitors**.

CLAIMS:

CLMS(4)

4. A recombinant DNA molecule as claimed in claim 2 wherein the gene encodes a toxic or therapeutic substance or an **angiogenic** factor.

CLAIMS:

CLMS(7)

7. . . . regulatory element as claimed in claim 1 operatively linked to a gene encoding a toxic or therapeutic substance or an **angiogenic** factor, and a reporter gene.

US PAT NO: 5,459,250 [IMAGE AVAILABLE] L3: 5 of 9

SUMMARY:

BSUM(6)

Among . . . and 3), required for growth and differentiation of lymphocytes, and colony stimulating factors (CSF), promoting growth and differentiation of hematopoietic **stem** cells; (4) **angiogenic** (literally "blood-vessel-forming") growth factors, such as the fibroblast growth factors (FGF) believed to promote growth and organization of

endothelial cells into new blood vessels; (5) miscellaneous growth factors released by tumor cells.

SUMMARY:

BSUM(7)

Two well-characterized **angiogenic** factors are basic and acidic fibroblast growth factors (FGF), believed to be most important in Vivo for endothelial cell growth.. . .

SUMMARY:

BSUM(8)

Co-pending U.S. patent application Ser. No. 07/806,791 filed Dec. 6, 1991 discloses an **angiogenic** mammalian growth factor isolated from Kaposi's Sarcoma cells and having substantial homology to each of acidic and basic fibroblast growth. . .

SUMMARY:

BSUM(10)

Of the above-mentioned growth factors, the **angiogenic** growth factors would be particularly useful as wound healing agents because of their ability to promote the formation and growth. . .

US PAT NO: 5,376,542 [IMAGE AVAILABLE] L3: 6 of 9

DETDESC:

DETD(23)

In addition to epithelial cells, non-epithelial cells such as **endothelial** cells, fibroblasts, muscle cells, bone cells, cartilage cells and brain tissue cells (neurons, glial cells, etc.) can also be immortalized using the method of the present invention. Further, hematopoietic cells such as red blood cell **progenitor** cells, white blood cell **progenitor** cells and megakariocytes can all be immortalized. These immortalized hematopoietic cells can be reintroduced into a host mammal during gene. . .

DETDESC:

DETD(37)

For . . . histocompatibility (HLA) antigens to initiate an immune rejection of the tumor, or alternatively secrete agents which would interfere with further **angiogenesis**, such as growth factor receptor-blocking peptides.

US PAT NO: 5,332,671 [IMAGE AVAILABLE] L3: 7 of 9

SUMMARY:

BSUM(6)

A . . . in the adenohypophysial cell cords. Ferrara and Gospodarowitz, Biochem. Biophys. Res. Comm., 157: 1376-1382 (1988). In addition, FC produce the **angiogenic** mitogen basic fibroblast growth factor (bFGF). Ferrara et al., Proc. Natl. Acad. Sci., U.S.A., 84: 5773-5777 (1987).

DETDESC:

DETD(163)

The chick chorioallantoic membrane (from eggs commercially available) was used as an in vivo system to study the **angiogenic** properties of purified VEGF. The chorioallantoic membrane was dislocated by the false air sac technique, as described by Hamburger, V.,. . .

DETDESC:

DETD(164)

A marked **angiogenic** response with radial growth of blood vessels toward the Sephadex beads (85% of embryos positive, n-59) was observed in eggs. . .

DETDESC:

DETD(186)

It . . . is expressed in organs other than the pituitary gland. However, considering the fundamental role of vascular endothelial cell growth and **angiogenesis** in a great variety of normal and pathological proliferations, the distribution of VEGF is likely to be more widespread.

DETDESC:

DETD(188)

These homologies suggest a common origin from an ancestral **progenitor** gene for the sis protooncogene and the gene encoding bovine VEGF. While PDGF is active on a wide variety of cell types of mesenchymal origin and inactive on **endothelial** cells, VEGF appears to be a highly specialized molecule selective for vascular **endothelial** cells. This suggests that the structural divergence between the product of sis protooncogene and VEGF was accompanied by a marked. . .

DETDESC:

DETD(189)

The . . . cell death or lysis. Thus, VEGF may potentially play a role as a soluble mediator of endothelial cell growth and **angiogenesis**. VEGF was found by Northern, blotting to be encoded in follicular cells by a single 3.7 kb messenger RNA.

US PAT NO: 5,100,668 [IMAGE AVAILABLE] L3: 8 of 9

SUMMARY:

BSUM(3)

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       (c) format only 1997 Knight-Ridder Info

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     $0.06  Estimated cost File1
     $0.06  Estimated cost this search
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  File  55:BIOSIS PREVIEWS(R)  1985-1997/Jun W2
        (c) 1997 BIOSIS
  File  72:EMBASE  1985-1997/May W4
        (c) 1997 Elsevier Science B.V.
  File 154:MEDLINE(R)  1985-1997/Aug W1
        (c) format only 1997 Knight-Ridder Info
  File 399:CA SEARCH(R)  1967-1997/UD=12624
        (c) 1997 American Chemical Society
*File 399: Use is subject to the terms of your user/customer agreement.
For format prices, including formats 6 & 8, see HELP RATES 399.
  File 351:DERWENT WPI  1963-1997/UD=9724;UP=9721;UM=9717
        (c)1997 Derwent Info Ltd
*File 351: F351 excluded from Web promotional offer *** Reloaded
See "HELP NEWS 351" for some FAQs. *** OnTap F280 is now reloaded

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E4         1  AU=ISNER A
E5         1  AU=ISNER A B
E6        10  AU=ISNER A F
E7        13  AU=ISNER A.F.
E8        13  AU=ISNER AF
E9         1  AU=ISNER D
E10       38  AU=ISNER J
E11        1  AU=ISNER J D
E12        1  AU=ISNER J J

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Ref    Items  Index-term
E13      419  AU=ISNER J M
E14        3  AU=ISNER J.
E15      206  AU=ISNER J.M.
E16      191  AU=ISNER JM
E17        1  AU=ISNER L
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  E21         3  AU=ISNER R E
  E22         9  AU=ISNER R J
  E23         4  AU=ISNER R.J.
  E24         4  AU=ISNER RJ

            Enter P or PAGE for more
 ?s e13-e16

               419  AU=ISNER J M
                 3  AU=ISNER J.
               206  AU=ISNER J.M.
               191  AU=ISNER JM
       S1      819  E13-E16
 ?s s1 and endothel?

               819  S1
            222842  ENDOTHEL?
       S2      170  S1 AND ENDOTHEL?
 ?s s2 and (progenitor? or stem)

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             41773  PROGENITOR?
            176095  STEM
       S3       12  S2 AND (PROGENITOR? OR STEM)
 ?rd s13

 >>>Set 13 has not yet been created.
 ?rd s3

 >>>Duplicate detection is not supported for File 351.

 >>>Records from unsupported files will be retained in the RD set.
 ...completed examining records
       S4        6  RD S3 (unique items)
 ?t s4/7/all


  4/7/1      (Item 1 from file: 55)
 DIALOG(R)File  55:BIOSIS PREVIEWS(R)
 (c) 1997 BIOSIS. All rts. reserv.

 13451523      BIOSIS Number: 99451523
   Isolation of putative progenitor endothelial cells for angiogenesis
   Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T;
 Witzenbichler B; Schatteman G; Isner J M
   Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med.,
 736 Cambridge St., Boston, MA 02135, USA
   Science (Washington D C) 275 (5302). 1997.  964-967.
   Full Journal Title:  Science (Washington D C)
   ISSN: 0036-8075
   Language: ENGLISH
   Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192
   Putative  endothelial  cell (EC) progenitors or angioblasts were isolated
 from human peripheral blood by magnetic bead selection on the basis of cell
 surface  antigen expression. In vitro, these cells differentiated into ECs.
```

In animal models of ischemia, heterologous, homologous, and autologous EC progenitors incorporated into sites of active angiogenesis. These findings suggest that EC progenitors may be useful for augmenting collateral vessel growth to ischemic tissues (therapeutic angiogenesis) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian angiogenesis.

4/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

4/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768
Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferative activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 mu-g) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the

midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 (P lt 0.05 versus control), and returned to baseline levels by day 7. SMC proliferation in midzone collaterals also increased 2.7-fold in response to VEGF (P lt 0.05). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collateral of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure wets documented at day 7 after VEGF (P lt 0.01 versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

4/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092
Background: Recent studies have suggested that vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF) may have synergistic effects on the induction of angiogenesis in vitro. Therefore, we investigated the hypothesis that the simultaneous administration of VEGF and bFGF, each having been previously shown to independently enhance collateral development in an animal model of hind limb ischemia, could have a synergistic effect in vivo. Methods and Results: Ten days after surgical induction of unilateral hind limb ischemia, New Zealand White rabbits were randomized to receive either VEGF 500 mu-g alone (n=6), bFGF 10 mu-g alone (n=7), VEGF 500 mu-g, immediately followed by 10 mu-g bFGF (n=7), or vehicle only (control animals, n=8) in each case administered intra-arterially via a catheter in the internal iliac artery of the ischemic limb. BP ratio (BPR, ischemic/healthy limb) at day 10 for the VEGF+bFGF group was 0.82 +- 0.01, much superior (P lt .0005) to that of either the VEGF group (0.52 +- 0.02) or the bFGF group (0.57 +- 0.02). This outcome persisted at day 30: BPR in the VEGF+bFGF group (0.91 +- 0.02) exceeded that of the control group (0.49+-0.05, P lt .0001), the VEGF group (0.65 +- 0.03, P lt .0005), or the bFGF group (0.66 +- 0.03, P lt .0005). Serial angiography demonstrated a progressive increase in luminal diameter of the stem collateral artery and the number of opacified collaterals in the thigh of the ischemic limbs in all groups. Stem artery diameter with VEGF+bFGF (1.34 +- 0.07 mm) on day 30 was significantly (P lt .05) greater than with either VEGF (1.09 +- 0.09) or bFGF (1.18 +- 0.06) alone. Capillary density was significantly greater (P lt .05) in VEGF+bFGF animals (275 +- 20 mm-2) compared with VEGF (201+-8) or bFGF (209 +- 15). Conclusions: Combined administration of VEGF and bFGF stimulates significantly greater and more rapid augmentation of collateral

circulation, resulting in superior hemodynamic improvement compared with either VEGF or bFGF alone. This synergism of two angiogenic mitogens with different target cell specificities may have important implications for the treatment of severe arterial insufficiency in patients whose disease is not amenable to direct revascularization.

4/7/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891
Vascular endothelial growth factor (VEGF) is a heparin-binding, endothelial cell-specific mitogen. Previous studies have suggested that VEGF is a regulator of naturally occurring physiologic and pathologic angiogenesis. In this study we investigated the hypothesis that the angiogenic potential of VEGF is sufficient to constitute a therapeutic effect. The soluble 165 amino acid isoform of VEGF was administered as a single intraarterial bolus to the internal iliac artery of rabbits in which the ipsilateral femoral artery was excised to induce severe, unilateral hind limb ischemia. Doses of 500-1,000 mu-g of VEGF produced statistically significant augmentation of collateral vessel development by angiography as well as the number of capillaries by histology; consequent amelioration of the hemodynamic deficit in the ischemic limb was significantly greater in animals receiving VEGF than in nontreated controls (calf blood pressure ratio, 0.75 +- 0.14 vs. 0.48 +- 0.19, P lt 0.05). Serial angiograms disclosed progressive linear extension of the collateral artery of origin (stem artery) to the distal point of parent vessel (reentry artery) reconstitution in seven of nine VEGF-treated animals. These findings establish proof of principle for the concept that the angiogenic activity of VEGF is sufficiently potent to achieve therapeutic benefit. Such a strategy might ultimately be applicable to patients with severe limb ischemia secondary to arterial occlusive disease.

4/7/6 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S.; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA

American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440

LANGUAGES: English SUMMARY LANGUAGES: English

Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferarive activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 microg) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 ($P < 0.05$ versus control), and returned to baseline levels by day 7. SMC proliferation in midzone collaterals also increased 2.7-fold in response to VEGF ($P < 0.05$). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collaterals of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure was documented at day 7 after VEGF ($P < 0.01$ versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

?ds

Set	Items	Description
S1	819	E13-E16
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S3	12	S2 AND (PROGENITOR? OR STEM)
S4	6	RD S3 (unique items)

?t s4/3/all

4/3/1 (Item 1 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13451523 BIOSIS Number: 99451523

Isolation of putative progenitor endothelial cells for angiogenesis

Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; Isner J M

Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston, MA 02135, USA

Science (Washington D C) 275 (5302). 1997. 964-967.

Full Journal Title: Science (Washington D C)

ISSN: 0036-8075

Language: ENGLISH

Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192

4/3/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

4/3/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768

4/3/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092

4/3/5 (Item 5 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)
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10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

4/3/6 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE
(c) 1997 Elsevier Science B.V. All rts. reserv.

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S.; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA
American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English
?s angiogen? and endotheli? and (progenitor? or stem)

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         222794  ENDOTHELI?
          41773  PROGENITOR?
         176095  STEM
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...examined 50 records (100)
...completed examining records
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?s s6 and (therap? or treat? or vivo or patient?)

Processing
Processing
Processing

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        523388  VIVO
       2905926  PATIENT?
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?t s7/7/all

7/7/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13498880 BIOSIS Number: 99498880
The broad spectrum of cytokine gene expression by myoid cells from the human marrow microenvironment
Sensebe L; Deschaseaux M; Li J; Herve P; Charbord P
INSERM, Etablissement Tranfusion Sanguine, 1 Boulvard A. Fleming, 25020 Besancon, France
Stem Cells (Miamisburg) 15 (2). 1997. 133-143.
Full Journal Title: Stem Cells (Miamisburg)
ISSN: 1066-5099
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 010 Ref. 137718
Nontransformed stromal colony-derived cell lines (CDCLs) consist of a pure stromal cell population that differentiates following a vascular smooth muscle cell repertoire, and whose in vivo counterpart is that of myoid cells found in adult and fetal human bone marrow cords. We studied the cytokine expression by reverse-transcriptase polymerase chain reaction (RT-PCR) from pooled fast-growing clones from 10 different bone marrow samples. RT-PCR indicated that 30 cytokines (out of 42 studied) were expressed by CDCLs (20 after medium renewal and hydrocortisone renewal, three after addition of interleukin 1-beta (IL-1-beta) and seven in only part of the CDCL layers examined). The cytokines expressed comprised mediators known to be involved in the maintenance of early and late hematopoiesis (IL-1-alpha and IL-beta, IL-6, IL-7, IL-8, IL-11 and IL-13; colony-stimulating factors, thrombopoietin, erythropoietin, stem cell factor, flt 3-ligand, hepatocyte cell growth factor, tumor necrosis factor alpha, leukemia inhibitory factor, transforming growth factors beta-1 and beta-3; and macrophage inflammatory protein lot), angiogenic factors (fibroblast growth factors 1 and 2, vascular endothelial growth factor) and mediators whose usual target (and source) is the connective tissue-forming cells (platelet-derived growth factor A, epidermal growth factor, transforming growth factors alpha and beta-2, oncostatin M and insulin-like growth factor 1), or neuronal cells (nerve growth factor). The cytokines not expressed were lymphokines (IL-2, IL-3, IL-4, IL-5, IL-9, IL-10, and IL-12 and interferon y) or mediators synthesized by macrophages (inhibin, activin, platelet-derived growth factor B, and IL-1 receptor antagonist). This study complements the description of the phenotype of the myoid cells, confirming that these cells are the marrow connective tissue-forming cells; moreover, this work suggests that stromal control of hematopoiesis is multifactorial and that myoid cells are involved in the control of marrow angiogenesis and innervation.

7/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13451523 BIOSIS Number: 99451523
Isolation of putative progenitor endothelial cells for angiogenesis
Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; Isner J M

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Science (Washington D C) 275 (5302). 1997. 964-967.
Full Journal Title: Science (Washington D C)
ISSN: 0036-8075
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192

Putative endothelial cell (EC) progenitors or angioblasts were isolated from human peripheral blood by magnetic bead selection on the basis of cell surface antigen expression. In vitro, these cells differentiated into ECs. In animal models of ischemia, heterologous, homologous, and autologous EC progenitors incorporated into sites of active angiogenesis. These findings suggest that EC progenitors may be useful for augmenting collateral vessel growth to ischemic tissues (therapeutic angiogenesis) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian angiogenesis.

7/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13405305 BIOSIS Number: 99405305
Constitutive production and thrombin-induced release of vascular endothelial growth factor by human megakaryocytes and platelets
Mohle R; Green D; Moore M A S; Nachman R L; Rafii S
Div. Hematol. Oncol., Cornell Univ. Med. Coll., 1300 York Ave., Room C-616 New York, NY 10021, USA
Proceedings of the National Academy of Sciences of the United States of America 94 (2). 1997. 663-668.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 006 Ref. 077448

We have shown that coculture of bone marrow microvascular endothelial cells with hematopoietic progenitor cells results in proliferation and differentiation of megakaryocytes. In these long-term cultures, bone marrow microvascular endothelial cell monolayers maintain their cellular integrity in the absence of exogenous endothelial growth factors. Bt s6/3/all ecause this
interaction may involve paracrine secretion of cytokines, we evaluated megakaryocytic cells for secretion of vascular endothelial growth factor (VEGF). Megakaryocytes (CD41a+) were generated by ex vivo expansion of hematopoietic progenitor cells with kit-ligand and thrombopoietin for 10 days and further purified with immunomagnetic microbeads. Using reverse transcriptionPCR, we showed that megakaryocytic cell lines (Dami, HEL) and purified megakaryocytes expressed mRNA of the three VEGF isoforms (121, 165, and 189 amino acids). Large quantities of VEGF (gt 1 ng/10-6 cells/3 days) were detected in the supernatant of Dami cells, ex vivo-generated megakaryocytes, and CD41a+ cells isolated from bone marrow. The constitutive secretion of VEGF by CD41a+ cells was stimulated by growth factors of the megakaryocytic lineage (interleukin 3, thrombopoietin). Western blotting of heparinSepharose-enriched supernatant mainly detected the isoform VEGF-165. In addition, immunohistochemistry showed intracytoplasmic VEGF in polyploid megakaryocytes. Thrombin stimulation of megakaryocytes and platelets resulted in rapid release of VEGF within 30 min. We conclude that human megakaryocytes produce and secrete VEGF in an

inducible manner. Within the bone marrow microenvironment, VEGF secreted by megakaryocytes may contribute to the proliferation of endothelial cells. VEGF delivered to sites of vascular injury by activated platelets may initiate angiogenesis.

7/7/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13343585 BIOSIS Number: 99343585
Vectors for cancer gene therapy
Zhang J; Russell S J
Cambridge Cent. Protein Eng., MRC Cent., Hills Road, Cambridge CB2 2QH, UK
Cancer and Metastasis Reviews 15 (3). 1996. 385-401.
Full Journal Title: Cancer and Metastasis Reviews
ISSN: 0167-7659
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 002 Ref. 014839

7/7/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

7/7/6 (Item 6 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13155009 BIOSIS Number: 99155009
Neovascularization in human germ cell tumors correlates with a marked increase in the expression of the vascular endothelial growth factor but not the placenta-derived growth factor
Viglietto G; Romano A; Maglione D; Rambaldi M; Paoletti I; Lago C T; Califano D; Monaco C; Mineo A; Santelli G; Manzo G; Botti G; Chiappetta G; Persico M G
Ist. Nazionale Tumori, "Fondazione Senatore Pascale", Via M. Semmola, 80131 Naples, Italy
Oncogene 13 (3). 1996. 577-587.
Full Journal Title: Oncogene
ISSN: 0950-9232
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 007 Ref. 103140

Neoangiogenesis is a prerequisite for tumor growth and metastasis. In germ cell cancer patients with the disease limited to the testicle (stage A), tumor-associated neovascularization is predictive of metastatic disease (stage B). To investigate the molecular mechanisms underlying neovascularization in human germ cell tumors (GCTs), we analysed the expression of two angiogenic growth factors, vascular endothelial growth factor (VEGF) and placenta growth factor (PlGF), and of their receptors (FLT-1) and Flk-1/KDR) in a panel of testicular tumors. In this study we show a marked increase in VEGF expression in 36/44 (81.8%) primary testicular-derived GCTs, as compared to normal testis, that significantly correlates with a high density of intratumor microvessels (r=0.72461, P lt 0.001; n=24). As determined by RT-PCR and/or Western blot, the predominant VEGF isoforms expressed in GCTs are the VEGF-121 and VEGF-165, which are more efficiently secreted by the cells, and thus more active in eliciting angiogenesis. Conversely, in the case of PIGF, only a weak correlation with the vascular density of tumors is observed (r=0.26599, P lt 0.05; n=24). Northern blot analysis also revealed significant up-regulation of VEGF/PIGF receptors in highly vascularized germ cell tumors, compared to normal testes. These findings suggest that VEGF may act in a paracrine manner to induce neovascularization, oedema extravasation and cyst formation in human germ cell tumors. The correlation between VEGF expression and the vascular density of tumors, suggest that the evaluation of VEGF expression may be of help in predicting patients at risk for metastatic diseases. Finally, we demonstrate that VEGF up-regulation may occur at the RNA level since no gene amplification is observed; conversely, in in vitro models such as the embryonal stem cell line NTERA-2 and the choriocarcinoma JEG-3 cell line, VEGF (but not PlGF) mRNA expression is regulated by hypoxic stress.

7/7/7 (Item 7 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12226586 BIOSIS Number: 98826586
Endothelial area as a prognostic indicator for invasive breast carcinoma
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Dep. Pathol., City of Hope Natl. Med. Cent., 1500 East Duarte Road, Duarte, CA 91010, USA
Cancer 77 (10). 1996. 2077-2085.
Full Journal Title: Cancer
ISSN: 0008-543X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 012 Ref. 177008
BACKGROUND: Vascular enumeration using antibodies to Factor VIII has been reported to be an independent prognostic indicator of invasive breast carcinoma. METHODS: To eliminate potential subjectivity in distinguishing between individual vessels, especially in areas of tangled capillaries, total endothelial area (EA) was assessed using a Samba 4000 image analyzer. One hundred seventy-eight invasive breast carcinomas (Stage 1 and 2, mean follow-up: 71 months) were immunostained for the presence of CD34, the human hematopoietic progenitor cell antigen also present in endothelium, and EA was quantitated within 5 adjacent 20 times fields (0.74 mm-2). Additionally, these same vessels were manually counted from the image analyzer. Manual counts were also made from a photomicrograph representative of a single 10 times field (1.06 mm-2). RESULTS: High grade carcinomas contained greater endothelial area than low grade carcinomas (P = 0.0001). Endothelial area was prognostically significant (P = 0.004) in univariate analysis of disease-free survival (DFS) and overall survival

(OS), as were stage of disease, tumor size, and combined histologic grade (P ltoreq 0.024). Manual vessel counts from the monitor were significant for OS only. Manual vessel counts from photomicrographs showed no statistically significant association with DFS or OS. In multivariate analysis, EA, but not vessel enumeration, remained as an independent predictor for OS (lymph node negative patients only, n = 87) and for DFS (lymph node positive patients only, n = 91). For the entire group of patients (lymph node negative and lymph node positive) independent predictors of DFS and OS were tumor grade and size (P ltoreq 0.006). CONCLUSIONS: Of the three methods used to evaluate tumor angiogenesis, total endothelial area, as objectively evaluated by image analysis, was the only independent prognostic indicator for OS for patients with lymph node negative invasive breast carcinoma.

7/7/8 (Item 8 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023

Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency

Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M

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American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768

Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferative activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 mu-g) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 (P lt 0.05 versus control), and returned to baseline levels by day 7. SMC proliferation in midzone collaterals also increased 2.7-fold in response to VEGF (P lt 0.05). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collateral of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure wets documented at day 7 after VEGF (P lt 0.01 versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to

the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

7/7/9 (Item 9 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
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Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092
Background: Recent studies have suggested that vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF) may have synergistic effects on the induction of angiogenesis in vitro. Therefore, we investigated the hypothesis that the simultaneous administration of VEGF and bFGF, each having been previously shown to independently enhance collateral development in an animal model of hind limb ischemia, could have a synergistic effect in vivo. Methods and Results: Ten days after surgical induction of unilateral hind limb ischemia, New Zealand White rabbits were randomized to receive either VEGF 500 mu-g alone (n=6), bFGF 10 mu-g alone (n=7), VEGF 500 mu-g, immediately followed by 10 mu-g bFGF (n=7), or vehicle only (control animals, n=8) in each case administered intra-arterially via a catheter in the internal iliac artery of the ischemic limb. BP ratio (BPR, ischemic/healthy limb) at day 10 for the VEGF+bFGF group was 0.82 +- 0.01, much superior (P lt .0005) to that of either the VEGF group (0.52 +- 0.02) or the bFGF group (0.57 +- 0.02). This outcome persisted at day 30: BPR in the VEGF+bFGF group (0.91 +- 0.02) exceeded that of the control group (0.49+-0.05, P lt .0001), the VEGF group (0.65 +- 0.03, P lt .0005), or the bFGF group (0.66 +- 0.03, P lt .0005). Serial angiography demonstrated a progressive increase in luminal diameter of the stem collateral artery and the number of opacified collaterals in the thigh of the ischemic limbs in all groups. Stem artery diameter with VEGF+bFGF (1.34 +- 0.07 mm) on day 30 was significantly (P lt .05) greater than with either VEGF (1.09 +- 0.09) or bFGF (1.18 +- 0.06) alone. Capillary density was significantly greater (P lt .05) in VEGF+bFGF animals (275 +- 20 mm-2) compared with VEGF (201+-8) or bFGF (209 +- 15). Conclusions: Combined administration of VEGF and bFGF stimulates significantly greater and more rapid augmentation of collateral circulation, resulting in superior hemodynamic improvement compared with either VEGF or bFGF alone. This synergism of two angiogenic mitogens with different target cell specificities may have important implications for the treatment of severe arterial insufficiency in patients whose disease is not amenable to direct revascularization.

7/7/10 (Item 10 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11914318 BIOSIS Number: 98514318
Cloning and functional analysis of the promoter for KDR-flk-1, a receptor for vascular endothelial growth factor
Patterson C; Perrella M A; Hsieh C-M; Yoshizumi M; Lee M-E; Haber E
Build. 2, Cardiovascular Biol. Lab., Harvard Sch. Public Health, 677 Huntington Ave., Boston, MA 02115, USA
Journal of Biological Chemistry 270 (39). 1995. 23111-23118.
Full Journal Title: Journal of Biological Chemistry
ISSN: 0021-9258
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 011 Ref. 165175
KDR/flk-1 is one of two receptors for vascular endothelial growth factor, a potent angiogenic peptide. KDR/flk-1 is an early marker for endothelial cell progenitors, and its expression is restricted to endothelial cells in vivo. To investigate the molecular mechanisms regulating expression of KDR/flk-1, we cloned and characterized the promoter of the human KDR/flk-1 gene. The transcription start site was localized by primer extension and ribonuclease protection to a nucleotide 303 base pairs (bp) 5' of the initiation methionine codon. The 5'-flanking sequence is rich in G and C residues and contains five Sp1 elements but no TATA consensus sequence. By reporter gene transfection experiments, we found that apprx 4 kilobases of YDR/flk-1 5'-flanking sequence directed high level luciferase activity in bovine aortic endothelial cells; further deletion analysis revealed positive regulatory elements between hp -225 to -164, -95 to -77, -77 to -60, and +105 to +127. Mutation of an atypical GATA sequence between bp + 105 and +127 did not affect promoter activity, suggesting that GATA elements are not essential for the high level promoter activity of this gene. Consistent with endothelial cell-restricted expression of KDR/flk-1 mRNA, we found that the 4-kilobase flanking sequence directed high level promoter activity in endothelial cells but not in other cell types. To our knowledge this is the first report characterizing the KDR/flk-1 promoter. Understanding the KDR/flk-1 promoter will allow us to investigate endothelial cell-specific gene regulation and to uncover methods for targeting gene delivery specifically to endothelial cells.

7/7/11 (Item 11 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11730387 BIOSIS Number: 98330387
Angiogenic properties of human immunodeficiency virus type 1 Tat protein
Albini A; Barillari G; Benelli R; Gallo R C; Ensoli B
Lab. Tumor Cell Biol., Build. 37, Room 6A09, Natl. Cancer Inst., 37 Convent Drive, Bethesda, MD 20892-4255, USA
Proceedings of the National Academy of Sciences of the United States of America 92 (11). 1995. 4838-4842.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 038111
Extracellular human immunodeficiency virus type 1 (HIV-1) Tat protein promotes growth of spindle cells derived from AIDS-associated Kaposi sarcoma (AIDS-KS), an angioproliferative disease very frequent in HIV-1-infected individuals. Normal vascular cells, progenitors of AIDS-KS cells, proliferate in response to Tat after exposure to inflammatory cytokines, whose levels are augmented in HIV-1-infected individuals and in

.KS-lesions. Here we show that Tat also promotes AIDS-KS and normal vascular cells to migrate and to degrade the basement membrane and stimulates endothelial cell morphogenesis on a matrix substrate. These effects are obtained at picomolar concentrations of exogenous Tat and are promoted by the treatment of the cells with the same inflammatory cytokines stimulating expression of the receptors for Tat, the integrins alpha-5-beta-1 and alpha-v-beta-3. Thus, under specific circumstances, Tat has angiogenic properties. As Tat and its receptors are present in AIDS-KS lesions, these data may explain some of the mechanisms by which Tat can induce angiogenesis and cooperate in the development of AIDS-KS.

7/7/12 (Item 12 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891
Vascular endothelial growth factor (VEGF) is a heparin-binding, endothelial cell-specific mitogen. Previous studies have suggested that VEGF is a regulator of naturally occurring physiologic and pathologic angiogenesis. In this study we investigated the hypothesis that the angiogenic potential of VEGF is sufficient to constitute a therapeutic effect. The soluble 165 amino acid isoform of VEGF was administered as a single intraarterial bolus to the internal iliac artery of rabbits in which the ipsilateral femoral artery was excised to induce severe, unilateral hind limb ischemia. Doses of 500-1,000 mu-g of VEGF produced statistically significant augmentation of collateral vessel development by angiography as well as the number of capillaries by histology; consequent amelioration of the hemodynamic deficit in the ischemic limb was significantly greater in animals receiving VEGF than in nontreated controls (calf blood pressure ratio, 0.75 +- 0.14 vs. 0.48 +- 0.19, P lt 0.05). Serial angiograms disclosed progressive linear extension of the collateral artery of origin (stem artery) to the distal point of parent vessel (reentry artery) reconstitution in seven of nine VEGF-treated animals. These findings establish proof of principle for the concept that the angiogenic activity of VEGF is sufficiently potent to achieve therapeutic benefit. Such a strategy might ultimately be applicable to patients with severe limb ischemia secondary to arterial occlusive disease.

7/7/13 (Item 13 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

6519099 BIOSIS Number: 85119620
VASCULOGENESIS AND ANGIOGENESIS IN EMBRYONIC-STEM-CELL-DERIVED EMBRYOID BODIES

RISAU W; SARIOLA H; ZERWES H-G; SASSE J; EKBLOM P; KEMLER R; DOETSCHMAN T
MAX-PLANCK-INST. ENTWICKLUNGSBIOLOGIE, SPEMANNSTRASSE 35-39, 7400 TUEBINGEN, W. GER.
DEVELOPMENT (CAMB) 102 (3). 1988. 471-478. CODEN: DEVPE
Full Journal Title: DEVELOPMENT (Cambridge)
Language: ENGLISH

Embryonic stem cells (ESC) have been established previously from the inner cell mass cells of mouse blastocysts. In suspension culture, they spontaneously differentiate to blood-island-containing cystic embryoid bodies (CEB). The development of blood vessels from in situ differentiating endothelial cells of blood islands, a process which we call vasculogenesis, was induced by injecting ESC into the peritoneal cavity of syngeneic mice. In the peritoneum, fusion of blood islands and formation of an in vivo-like primary capillary plexus occurred. Transplantation of ESC and ESC-derived complex and cystic embryoid bodies (ESC-CEB) onto the quail chorioallantoic membrane (CAM) induced an angiogenic response, which was directed by nonyolk sac endoderm structures. Neither yolk sac endoderm from ESC-CEB nor normal mouse yolk sac tissue induced angiogenesis on the quail CAM. Extracts from ESC-CEB stimulated the proliferation of capillary endothelial cells in vitro. Mitogenic activity increased during in vitro culture and differentiation of ESC. Almost all growth factor activity was associated with the cells. The ESC-CEB-derived endothelial cell growth factor bound to heparin-sepharose. The identification of acidic fibroblast growth factor (FGF) in heparin-sepharose-purified material was accomplished by immunoblot experiments involving antibodies against acidic and basic FGF. We conclude that vasculogenesis, the development of blood vessels from in situ differentiating endothelial cells, and angiogenesis, the sprouting of capillaries from preexisting vessels, are very early events during embryogenesis which can be studied using ESC differentiating in vitro. Our results suggest that vasculogenesis and angiogenesis are differently regulated.

7/7/14 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

10168376 EMBASE No: 96348565
Erythropoiesis and vasculogenesis in embryoid bodies lacking visceral yolk sac endoderm
Bielinska M.; Narita N.; Heikinheimo M.; Porter S.B.; Wilson D.B.
Department of Pediatrics, Washington Univ. School of Medicine, St. Louis Children's Hospital, One Children's Place, St Louis, MO 63110 USA
Blood (USA) , 1996, 88/10 (3720-3730) CODEN: BLOOA ISSN: 0006-4971
LANGUAGES: English SUMMARY LANGUAGES: English

During mouse embryogenesis the first hematopoietic and endothelial cells form in blood islands located between layers of visceral endoderm and mesoderm in the yolk sac. The role of visceral endoderm in primitive hematopoiesis and vasculogenesis is not well understood. We have assessed the consequences of a lack of visceral endoderm on blood cell and vessel formation using embryoid bodies derived from mouse embryonic stem (ES) cells deficient in GATA-4, a transcription factor expressed in yolk sac endoderm. When differentiated in vitro, these mutant embryoid bodies do not develop an external visceral endoderm layer. We found that Gata4-/- embryoid bodies, grown either in suspension culture or attached to a substratum, are defective in primitive hematopoiesis and vasculogenesis as evidenced by a lack of recognizable blood islands and vascular channels and a reduction in the expression of the primitive erythrocyte marker

epsilon(y)-globin. Expression of the endothelial cell transcripts Flk-1, Flt-1, and platelet-endothelial cell adhesion molecule (PECAM) was not affected in the mutant embryoid bodies. Gate4-/- ES cells retained the capacity to differentiate into primitive erythroblasts and endothelial cells when cultured in methylcellulose or matrigel. Analysis of chimeric mice, generated by injecting Gata4-/- ES cells into 8-cell stage embryos of ROSA26 transgenic animals, showed that Gate4-/- ES cells can form blood islands and vessels when juxtaposed to visceral endoderm in vivo. We conclude that the visceral endoderm is not essential for the differentiation of primitive erythrocytes or endothelial cells, but this cell layer plays an important role in the formation and organization of yolk sac blood islands and vessels.

7/7/15 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

10041079 EMBASE No: 96233379
Induction of embryonic vasculogenesis by bFGF and LIF in vitro and in vivo
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Developmental Biology (USA) , 1996, 177/1 (332-346) CODEN: DEBIA
ISSN: 0012-1606
LANGUAGES: English SUMMARY LANGUAGES: English
The de novo formation of blood vessels (vasculogenesis) is an integral part of embryogenesis. Elucidation of the role of cytokine cooperation in vasculogenesis may lead to a better understanding of organogenesis, blood vessel regulation during tumorigenesis, and tissue injury. We have used embryonic stem cells to derive an endothelial cell line, designated IEM, which expresses a range of endothelial markers, including Von Willibrand Factor VIII related antigen, vascular cell adhesion molecule, platelet-endothelial cell adhesion molecule (CD31), and receptors for acetylated low-density lipoprotein. More importantly, IEM cells can be induced upon exposure to combinations of basic fibroblast growth factor and leukemia inhibitory factor (LIF) to proliferate and undergo vasculogenesis in vitro, resulting in the formation of vascular tubes and microcapillary anastomoses. Moreover, exposure to both cytokines conditionally permits IEM cells to specifically chimerize microvascular endothelium in vivo following blastocyst injection. These results indicate that bFGF and LIF together contribute to the induction and support of embryonic vasculogenesis in an isolated endothelial cell line. Our results provide evidence that combined actions of bFGF/LIF may play a role in mechanisms controlling blood vessel development.

7/7/16 (Item 3 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S.

; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA
American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English

Proliferation of vascular cells has been previously shown to contribute to spontaneous development of coronary collaterals. Recent studies from several laboratories have established that collateral artery growth in both the heart and limb can be enhanced by administration of angiogenic growth factors, or therapeutic angiogenesis. In this study, we sought (1) to define the extent and time course of endothelial cell (EC) and smooth muscle cell (SMC) proliferation accompanying spontaneous collateral development during limb ischemia and (2) to determine the extent to which proliferarive activity of ECs and SMCs is augmented during therapeutic angiogenesis with vascular endothelial growth factor (VEGF), a heparin-binding EC-specific mitogen. Ten days after induction of limb ischemia by surgically excising the femoral artery of rabbits, either VEGF (500 to 1000 microg) or saline was administered as a bolus into the iliac artery of the ischemic limb. Cellular proliferation was evaluated by bromodeoxyuridine labeling for 24 hours at day 0 (immediately before VEGF administration) and at days 3, 5, and 7 after VEGF. EC proliferation in the midzone collaterals of VEGF-treated animals increased 2.8-fold at day 5 ($P < 0.05$ versus control), and returned to baseline levels by day 7. SMC proliferation in midzone collaterals also increased 2.7-fold in response to VEGF ($P < 0.05$). No significant increase in EC or SMC proliferation was observed in either the stem or re-entry collaterals of VEGF-treated animals compared with untreated ischemic control animals. Reduction of hemodynamic deficit in the ischemic limb measured by lower limb blood pressure was documented at day 7 after VEGF ($P < 0.01$ versus untreated, ischemic control). These data thus (1) establish the contribution of cellular proliferation to collateral vessel development in limb ischemia and (2) support the concept that augmented cellular proliferation contributes to the enhanced formation of collateral vessels after therapeutic angiogenesis with VEGF.

7/7/17 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

9536407 EMBASE No: 95103022
New approaches in the treatment of metastatic mammary carcinomas
STAND UND PERSPECTIVEN FUR DIE BEHANDLUNG DES METASTASIERTEN MAMMAKARZINOMS
Unger C.; Marme D.
Klinik fur Tumorbiologie, Albert-Ludwigs-Universitat, Breisacher Strasse 119, D-79011 Freiburg Germany
Schweizerische Rundschau fur Medizin/Praxis (Switzerland) , 1995, 84/13 (390-394) CODEN: SRMPD ISSN: 0369-8394
LANGUAGES: German SUMMARY LANGUAGES: English; German; French

The emergence of new cytotoxic agents and techniques for treatment of systemic disease as single modalities or in combination with irradiation and surgery will impact on the use of such agents in the management of systemic breast cancer. Metastatic breast carcinoma, unlike other solid tumors, is highly responsive to chemotherapy, response rates of 50 to 70% have been reported consistently, although there has not been a significant improvement on long-term survival of these patients in the last ten years.

New therapeutic approaches include cytotoxic and hormonal agents, growth and differentiation factors, monoclonal antibodies, hematopoietic stem cell support, conquest of tumor cell resistance by MDR-modulation, genetic manipulation, identification of new targets on the tumor surface, synthesis of target-oriented designer-drugs and inhibition of tumor angiogenesis. In breast cancer the tumor growth correlates with vascularization and angiogenesis. Tumor angiogenesis is stimulated by the vascular endothelial growth factor (VEGF). Microvessel density is a significant predictor of survival among node-negative women, who are at risk for having occult metastases at presentation. These patients could then be given systemic adjuvant therapy. Animal experiments show promising inhibition of tumor growth in nude mice after application of antibodies against VEGF. Other methods of manipulation of molecular mechanisms of angiogenesis are under investigation.

7/7/18 (Item 5 from file: 72)
DIALOG(R)File 72:EMBASE

9209096 EMBASE No: 94147090
Myogenic cells in the rat embryonic brain stem
De Vitry F.; Hillion J.; Catelon J.; Gros F.
Laboratoire de Biochimie Cellulaire, CNRS-URA 1115, College de France, 11, Place Marcelin Berthelot, 75231 Paris Cedex 05 France
C. R. ACAD. SCI. SER. III (France) , 1994, 317/4 (332-340) CODEN: CRASE
ISSN: 0764-4469
LANGUAGES: English SUMMARY LANGUAGES: English; French
The principal finding of this study is the establishment of culture conditions that permit the survival of a very limited population of muscle precursor cells from the embryonic and neonatal rat brain stem, with these cells displaying the capacity to differentiate into contractile striated fibers under these in vitro conditions. Examination of desmin and troponin T expression by immunoperoxidase analysis revealed the presence of the two muscle proteins in the mononucleated precursors and in differentiated multinucleated myotubes. In vivo, examination of sections at corresponding stages revealed the simultaneous presence of troponin T, desmin, and lectin binding sites - a property of endothelial cells - association which appears to be transitory, since it is no longer detectable in the adult brain. The presence of the choroid plexus neuroepithelium, in close vicinity with TnT+, desmin + cells located in a limited zone of the brain stem, as well as the stage of expression for these markers suggest an interaction between brain myogenic cells and the onset of the embryonic circulation. The question of the embryological origin of the brain myogenic cells is discussed.

7/7/19 (Item 6 from file: 72)
DIALOG(R)File 72:EMBASE

8643755 EMBASE No: 92324311
Retroviral analysis of cardiac morphogenesis: Discontinuous formation of coronary vessels
Mikawa T.; Fischman D.A.
Department of Cell Biology/Anatomy, Cornell University Medical College, 1300 York Avenue, New York, NY 10021 USA
PROC. NATL ACAD. SCI. U. S. A. (USA) , 1992, 89/20 (9504-9508) CODEN:

PNASA ISSN: 0027-8424
LANGUAGES: English SUMMARY LANGUAGES: English

Cellular progenitors of the coronary vasculature are believed to enter the chicken heart during epicardial morphogenesis between stages 17 and 27 (days 3-5) of egg incubation. To trace cells which give rise to the coronary arteries in vivo, we applied retroviral cell tagging procedures and analyzed clonal populations of vascular smooth muscle, endothelium, and connective tissue in the hearts of post-hatch chickens. Our data provide direct proof that (i) vascular smooth muscle progenitors begin to enter the heart at stage 17, substantially after the heart begins propulsive contractions; (ii) cardiac myocytes, vascular smooth muscle, perivascular fibroblasts, and coronary endothelial cells all derive from independent precursors when these cells migrate into the heart; (iii) endothelial cells of the coronary vessels have a different clonal origin than endothelial cells of the endocardium; (iv) coronary arteries form by the coalescence of discontinuous colonies (i.e., in situ vasculogenesis), each derived from a founder cell tagged at the time of retroviral injection (stages 17-18); and (v) coronary arteries contain discrete segments composed of 'polyclones.' These studies indicate the feasibility of gene targeting to coronary progenitors through the use of recombinant retroviruses.

7/7/20 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08919670 97141787

Inhibition of angiogenesis and breast cancer in mice by the microtubule inhibitors 2-methoxyestradiol and taxol.

Klauber N; Parangi S; Flynn E; Hamel E; D'Amato RJ

Department of Surgery, Children's Hospital, Boston, Massachusetts 02115, USA.

Cancer Res (UNITED STATES) Jan 1 1997, 57 (1) p81-6, ISSN 0008-5472 Journal Code: CNF

Languages: ENGLISH

Document type: JOURNAL ARTICLE

2-Methoxyestradiol (2-ME), an endogenous estrogen metabolite which disrupts microtubule function, has been shown to inhibit proliferating cells in vitro and suppress certain murine tumors in vivo. In vitro screening has determined that breast cancer cell lines are most sensitive to inhibition by 2-ME. Additionally, 2-ME has been shown to inhibit angiogenesis in vitro. We tested whether 2-ME suppresses cytokine-induced angiogenesis in vivo and inhibits growth of a human breast carcinoma in severe combined immunodeficient mice. A model of basic fibroblast growth factor (bFGF) and vascular endothelial growth factor (VEGF)-induced corneal neovascularization in C57BL/6 mice was used to evaluate the antiangiogenic effects of 2-ME and other microtubule inhibitors such as Taxol, vincristine, and colchicine. 2-ME (150 mg/kg p.o., n = 20) inhibited bFGF and VEGF-induced neovascularization by 39% and 54%, respectively. Taxol (6 mg/kg i.p., n = 17) inhibited bFGF and VEGF-induced neovascularization by 45% and 37%, respectively. Vincristine (0.2 mg/kg i.p., n = 8) and colchicine (0.25 mg/kg i.p., n = 8) had no effect. Treatment with 2-ME (75 mg/kg p.o., n = 9) for 1 month suppressed the growth of a human breast carcinoma in mice by 60% without toxicity. Recognition of the antiangiogenic and antitumor properties of 2-ME and Taxol may be crucial in planning clinical applications to angiogenesis-dependent diseases.

7/7/21 (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08907881 97126252
Inhibition of angiogenesis in human glioblastomas by chromosome 10 induction of thrombospondin-1.
Hsu SC; Volpert OV; Steck PA; Mikkelsen T; Polverini PJ; Rao S; Chou P; Bouck NP
Department of Microbiology-Immunology, R.H. Lurie Cancer Center, Northwestern University Medical School, Chicago, Illinois 60611, USA.
Cancer Res (UNITED STATES) Dec 15 1996, 56 (24) p5684-91, ISSN 0008-5472 Journal Code: CNF
Contract/Grant No.: CA52750, CA, NCI; CA56041, CA, NCI; HL39926, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE
Glioblastoma multiforme is distinguished from its less malignant astrocytoma precursors by intense angiogenesis and frequent loss of tumor suppressor genes on chromosome 10. Here we link these traits by showing that when a wild-type chromosome 10 was returned to any of three human glioblastoma cell lines U251, U87, or LG11, they lost their ability to form tumors in nude mice and switched to an antiangiogenic phenotype, as measured by the inhibition of capillary endothelial cell migration and of corneal neovascularization. This change in angiogenesis was directly due to the increased secretion of a potent inhibitor of angiogenesis, thrombospondin-1, because: (a) neutralizing thrombospondin completely relieved the inhibition; (b) the inhibitory activity of thrombospondin was not dependent on transforming growth factor beta; and (c) chromosome 10 introduction did not alter secreted inducing activity. The inducing activity was dependent on vascular endothelial cell growth factor and had an ED50 of 10 microg/ml in media conditioned by parental cells and 9-13 microg/ml in media conditioned by chromosome 10 revertants. Normal human astrocytes were also antiangiogenic due to secreted thrombospondin. The effect of chromosome 10 on thrombospondin production in vitro was reflected in patient material. Normal brain and lower grade astrocytomas known to retain chromosome 10 stained strongly for thrombospondin, but 12 of 13 glioblastomas, the majority of which lose chromosome 10, did not. These data indicate that the loss of tumor suppressors on chromosome 10 contributes to the aggressive malignancy of glioblastomas in part by releasing constraints on angiogenesis that are maintained by thrombospondin in lower grade tumors.

7/7/22 (Item 3 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08400034 95224442
[Are there alternative forms of therapy in breast carcinoma? Status and perspectives for the treatment of metastasized breast carcinoma]
Gibt es alternative Therapieformen beim Mammakarzinom? Stand und Perspektiven fur die Behandlung des metastasierten Mammakarzinoms.
Unger C; Marme D
Klinik fur Tumorbiologie, Albert-Ludwigs-Universitat Freiburg.
Schweiz Rundsch Med Prax (SWITZERLAND) Mar 28 1995, 84 (13) p390-4, ISSN 0369-8394 Journal Code: SRM
Languages: GERMAN Summary Languages: ENGLISH

Document type: JOURNAL ARTICLE English Abstract

The emergence of new cytotoxic agents and techniques for treatment of systemic disease as single modalities or in combination with irradiation and surgery will impact on the use of such agents in the management of systemic breast cancer. Metastatic breast carcinoma, unlike other solid tumors, is highly responsive to chemotherapy, response rates of 50 to 70% have been reported consistently, although there has not been a significant improvement on long-term survival of these patients in the last ten years. New therapeutic approaches include cytotoxic and hormonal agents, growth and differentiation factors, monoclonal antibodies, hematopoietic stem cell support, conquest of tumor cell resistance by MDR-modulation, genetic manipulation, identification of new targets on the tumor surface, synthesis of target-oriented designer-drugs and inhibition of tumor angiogenesis. In breast cancer the tumor growth correlates with vascularization and angiogenesis. Tumor angiogenesis is stimulated by the vascular endothelial growth factor (VEGF). Microvessel density is a significant predictor of survival among node-negative women, who are at risk for having occult metastases at presentation. These patients could then be given systemic adjuvant therapy. Animal experiments show promising inhibition of tumor growth in nude mice after application of antibodies against VEGF. Other methods of manipulation of molecular mechanisms of angiogenesis are under investigation.

7/7/23 (Item 4 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08378470 94173109

Angiogenic factors are hematopoietic growth factors and vice versa.

Bikfalvi A; Han ZC
INSERM U 118, Paris, France.

Leukemia (ENGLAND) Mar 1994, 8 (3) p523-9, ISSN 0887-6924
Journal Code: LEU
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

Angiogenic factors are potent growth factors promoting proliferation and differentiation of vascular endothelial cells. Recent evidence suggest that these factors also promote hematopoietic cell growth. The major group of angiogenic growth factors is the fibroblast growth factor (FGF) family. Two prototypes, acidic FGF and basic FGF, have been demonstrated to interact with granulopoiesis and megakaryocytopoiesis. Basic FGF stimulates granulopoiesis in long term bone marrow cultures while acidic and basic FGF promote megakaryocytopoiesis. These effects are presumably mediated via specific FGF receptors, that have been identified in bone marrow and leukemia cell lines. Besides the FGF family, angiogenic inhibitors such as platelet factor-4 (PF-4) have been found to exhibit an inhibitory effect on megakaryocytopoiesis. In contrast, it has been demonstrated that hematopoietic growth factors including granulocyte-macrophage colony-stimulating factor (GM-CSF), or erythropoietin promote angiogenesis in vivo and in vitro. In light of these recent observations and the common origin of endothelial cells and hematopoietic cells, it is suggested that angiogenic factors are hematopoietic growth factors and vice versa. However, these data must be interpreted with caution and a careful in vivo evaluation should be done before these observed in vivo effects are proven to be significant to the physiopathology of hematopoiesis or angiogenesis. (74 Refs.)

7/7/24 (Item 5 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08062628 95042611
In vitro studies on the existence of endothelial precursor cells in the subectodermal avascular region of quail wing buds.
Seifert R
Ruhr-Universitat Bochum, Abteilung fur Anatomie und Embryologie, Germany.
Cell Tissue Res (GERMANY) Sep 1994, 277 (3) p549-55, ISSN 0302-766X Journal Code: CQD
Contract/Grant No.: NICHD NO1-HD-2-3144, HD, NICHD
Languages: ENGLISH
Document type: JOURNAL ARTICLE
In vitro studies were performed to investigate the angiogenic capacity of different parts of the avian limb bud. Small pieces of wing mesenchyme of the vascularized core or of the avascular subectodermal region were obtained from quail embryos at stages 18 to 25, and were cultured. The identification of the avascular wing mesenchyme was made possible after injection of India ink via the vitelline vein or by bleeding control during in vivo dissection. Tissue cultures were treated with the QH-1 antibody or/and the endothelial cell marker DiI-Ac-LDL. Endothelial cells were found in cultures of the mesenchymal core and in those of the avascular subectodermal wing mesenchyme. Moreover, their appearance was independent of the stage of the donor embryo. Although there were no vessels, the subectodermal wing mesenchyme was able to produce endothelial cells that proliferated and differentiated under in vitro conditions. Thus, endothelial precursor cells probably existed within the avascular wing mesenchyme. These cells might be identical with the QH-1-positive isolated cells that have been described in immunohistochemical studies of this region; they may contribute to the growing capillary plexus of the limb bud.

7/7/25 (Item 6 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07417771 92329734
Capillary growth: a two-cell system.
D'Amore PA
Department of Surgery, Children's Hospital, Boston, MA 02115.
Semin Cancer Biol (UNITED STATES) Apr 1992, 3 (2) p49-56, ISSN 1044-579X Journal Code: A6Y
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL
Angiogenesis is central to a number of normal and pathologic processes, including tumor growth. The identification of several angiogenic factors and the isolation and culture of capillary endothelial cells (EC) have led to a greater understanding of the cellular and biochemical bases of new vessel growth. Until recently EC have been the focus of most studies of microvascular growth. However, capillaries are not simply tubes of EC but have also a second cellular component, the mural cell or pericyte. Little is known about the later stages of vessel growth, including the addition of the pericyte to the capillary and its influence on EC growth and function. Historically the pericyte was defined by its abluminal association with the EC in the capillary. Though the pericyte's function was largely unknown,

ultrastructural studies led to speculation regarding a role for the pericyte in contraction, as a stem cell and in the control of microvascular growth. Establishment of methods for the isolation, culture and identification of pericytes has permitted investigation into the role of the pericyte. EC and pericytes make frequent contact in vivo and co-culture studies of EC and pericytes reveal that the two cell types interact in a variety of ways including diffusible growth regulators, heterotypic contacts, and gap junctions. This intercellular communication is likely to be an important component of the complex mechanism(s) controlling microvascular growth and function. (62 Refs.)

7/7/26 (Item 7 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07051196 91288073
[Metastatic dissemination of cancer cells]
Dissemination metastatique des cellules cancereuses.
Cornil I; Theodorescu D; Kerbel RS; Poupon MF
Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada.
Pathol Biol (Paris) (FRANCE) Apr 1991, 39 (4) p300-7, ISSN 0369-8114
Journal Code: OSG
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL English Abstract
During the natural history of a tumor, cancer cells become more and more aggressive and their increasing malignancy leads usually to the patient's death. The expression of malignant properties by tumor cells is manifested by the occurrence of metastases and is the result of an overexpression of molecules that are normally or barely non expressed by the normal cell progenitors. These molecules can be involved in cell attachment (receptor to the extracellular matrix), in proteolysis (collagenases), in angiogenesis (b FGF), in adhesion to endothelial cells, in resistance to the immune system. The genetic instability of tumor cells favors the amplification, mutation and gene translocation events, resulting in the activation of some genes or/and oncogenes which might direct the expression of the malignant properties. Finally, metastatic cells have been shown to have a growth advantage over non metastatic cells, so that metastatic cell population becomes ultimately numerously dominant in the primary tumor. The current knowledge about the malignant cell properties allow us to begin to understand how a cancer cell becomes metastatic and how the metastatic dissemination is usually an ineluctable process. (30 Refs.)

7/7/27 (Item 8 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

06042847 90094568
Early haemopoietic stem cells in the avian embryo.
Dieterlen-Lievre F; Pardanaud L; Yassine F; Cormier F
Institut d'embryologie Cellulaire et Moleculaire du CNRS, Nogent s/Marne, France.
J Cell Sci Suppl (ENGLAND) 1988, 10 p29-44, ISSN 0269-3518
Journal Code: HNG
Languages: ENGLISH

Document type: JOURNAL ARTICLE; REVIEW; REVIEW, ACADEMIC

Using 'yolk sac chimaeras', we have previously demonstrated that stem cells, destined to colonize haemopoietic organs other than the yolk sac, arise in the embryo proper. We have now investigated the emergence and potentialities of these cells in vivo and in vitro. The in vivo approach consisted of interspecies grafting between quail and chick embryos. The cell progeny from the grafts was detected by means of QH1, a monoclonal antibody specific for the quail haemangioblastic lineage. When grafted into the dorsal mesentery of the chick embryo, which is a haemopoietic microenvironment, the region of the aorta from E3-E4 quail embryos generated large haemopoietic foci. When associated with a chick attractive thymic rudiment, cells left the quail aorta, entered this rudiment and underwent lymphopoiesis. Cell suspensions prepared from 40-50 chick aortae, seeded in appropriate semi-solid media, yielded macrophage, granulocyte or erythrocyte clones. These colony forming cells were two to eight times more frequent than in cell preparations from hatchling bone marrow. By contrast, cells prepared from the whole embryonic body deprived of the aorta were not clonogenic. By interspecies grafting of somatopleural (ectoderm + mesoderm, e.g. limb bud) or splanchnopleural rudiments (endoderm + mesoderm, e.g. lung, pancreas, intestine), the endothelial lining of blood vessels was shown to arise by two entirely different processes according to the rudiment considered: angiogenesis, i.e. invasion by extrinsic endothelial cells, in the limb bud, and vasculogenesis, i.e. in situ emergence of endothelial cells, in internal organs. The spleen, which first develops as a continuum to the pancreatic mesoderm, acquires its endothelial network by vasculogenesis, and is colonized by extrinsic haemopoietic stem cells. Granulopoietic cells in the pancreas and accessory cells in the lung are also extrinsic. Thus, in the case of endomesodermal rudiments, interspecies grafting reveals separate origins of endothelial and haemopoietic cells. (29 Refs.)

7/7/28 (Item 9 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

05989630 90002309

The response of the microvascular system to radiation: a review.

Baker DG; Krochak RJ

Division of Radiation Oncology, University of Virginia Medical Center, Charlottesville 22908.

Cancer Invest (UNITED STATES) 1989, 7 (3) p287-94, ISSN 0735-7907 Journal Code: CAI

Languages: ENGLISH

Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

The microvasculature is a ubiquitous organ system having a major role in the pathogenesis of radiation damage to normal tissues. Although the kinetics of radiation damage to endothelial cells is similar to other tissues (as reflected by Do and Dq) the late effect is a manifestation of injury, not only to the endothelial cell population, but also to the basement membrane. Tissue damage is progressive. The initial expression of radiation injury is an increased permeability leading to changes in the extracellular milieu. There is an irregular proliferation of endothelial cells leading to capillaries of irregular diameter and shape. Fibrous proliferation increases the histohematic barrier and is ultimately reflected in a loss of parenchymal cells. Replacement fibrosis progresses until a steady state is reached where the surviving parenchymal cells can be sustained by the microvasculature. The clinical significance depends on

the role of the organ system involved. For patients who have medical conditions which adversely effect the stability of the vascular system (hypertension, diabetes, etc.), the expressions of radiation injury may be more severe and increase the morbidity associated with these diseases. Angiogenesis in granulation tissue is less radiosensitive than in steady-state parenchymal tissues. Wound healing is not significantly affected by commonly used therapeutic doses of irradiation, 40-50 Gy delivered 4-6 weeks preoperatively or postoperatively early in the development of the granulation tissue, but may be complicated where a significant degree of fibrosis has developed. The vascular responses leading to telangiectasia were discussed. (39 Refs.)
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6/3/1 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13533995 BIOSIS Number: 99533995
CD34 is involved in endothelial cell apoptosis and angiogenesis
Zhang D N; Khush K K; Romero L I; Chan V T; Abrams K; Hultquist K L; Herron G S
Dep. Dermatol., Stanford Univ. Sch. Med., Stanford, CA, USA
Journal of Investigative Dermatology 108 (4). 1997. 581.
Full Journal Title: Annual Meeting of the Society for Investigative Dermatology, Washington, D.C., USA, April 23-27, 1997. Journal of Investigative Dermatology
ISSN: 0022-202X
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 006 Ref. 098775

6/3/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13500467 BIOSIS Number: 99500467
Abnormal angiogenesis and responses to glucose and oxygen deprivation in mice lacking the protein ARNT
Maltepe E; Schmidt J V; Baunoch D; Bradfield C A; Simon M C
Univ. Chicago, 5841 S. Maryland Ave., MC 1028, Chicago, IL 60637, USA
Nature (London) 386 (6623). 1997. 403-407.
Full Journal Title: Nature (London)
ISSN: 0028-0836
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 010 Ref. 139305

6/3/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13498880 BIOSIS Number: 99498880
The broad spectrum of cytokine gene expression by myoid cells from the human marrow microenvironment
Sensebe L; Deschaseaux M; Li J; Herve P; Charbord P
INSERM, Etablissement Tranfusion Sanguine, 1 Boulvard A. Fleming, 25020 Besancon, France

Stem Cells (Miamisburg) 15 (2). 1997. 133-143.
Full Journal Title: Stem Cells (Miamisburg)
ISSN: 1066-5099
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 010 Ref. 137718

6/3/4 (Item 4 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13451523 BIOSIS Number: 99451523
Isolation of putative progenitor endothelial cells for angiogenesis
Asahara T; Murohara T; Sullivan A; Silver M; Van Der Zee R; Li T; Witzenbichler B; Schatteman G; Isner J M
Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston, MA 02135, USA
Science (Washington D C) 275 (5302). 1997. 964-967.
Full Journal Title: Science (Washington D C)
ISSN: 0036-8075
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 008 Ref. 107192

6/3/5 (Item 5 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13405305 BIOSIS Number: 99405305
Constitutive production and thrombin-induced release of vascular endothelial growth factor by human megakaryocytes and platelets
Mohle R; Green D; Moore M A S; Nachman R L; Rafii S
Div. Hematol. Oncol., Cornell Univ. Med. Coll., 1300 York Ave., Room C-616 New York, NY 10021, USA
Proceedings of the National Academy of Sciences of the United States of America 94 (2). 1997. 663-668.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 006 Ref. 077448

6/3/6 (Item 6 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13352929 BIOSIS Number: 99352929
Vascular endothelial growth factor (VEGF) is secreted by megakaryocytes, enhances their adhesion to endothelium, and supports maintenance of bone marrow microvascular endothelium
Moehle R; Moore M A S; Rafii S
Sloan-Kettering Inst., Dev. Hematopoiesis Lab., New York, NY, USA
Blood 88 (10 SUPPL. 1 PART 1-2). 1996. 187A.
Full Journal Title: Thirty-eighth Annual Meeting of the American Society of Hematology, Orlando, Florida, USA, December 6-10, 1996. Blood
ISSN: 0006-4971
Language: ENGLISH

Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 002 Ref. 025821

6/3/7 (Item 7 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13343585 BIOSIS Number: 99343585
Vectors for cancer gene therapy
Zhang J; Russell S J
Cambridge Cent. Protein Eng., MRC Cent., Hills Road, Cambridge CB2 2QH, UK
Cancer and Metastasis Reviews 15 (3). 1996. 385-401.
Full Journal Title: Cancer and Metastasis Reviews
ISSN: 0167-7659
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 002 Ref. 014839

6/3/8 (Item 8 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13328658 BIOSIS Number: 99328658
ELK and LERK-2 in developing kidney and microvascular endothelial assembly
Daniel T O; Stein E; Cerretti D P; St John P L; Robert B; Abrahamson D R
Nephrology Div., MCN S3223, Vanderbilt Univ., Nashville, TN 37232-2372, USA
Kidney International Supplement 0 (57). 1996. S73-S81.
Full Journal Title: Kidney International Supplement
ISSN: 0098-6577
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 002 Ref. 031772

6/3/9 (Item 9 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13302641 BIOSIS Number: 99302641
Blood cell drived endothelial cell precursor can participate in angiogenesis in vivo
Asahara T; Schatteman G; Sullivan A; Silver M; Isner J M
St. Elizabeth's Med. Cent., Boston, MA, USA
Circulation 94 (8 SUPPL.). 1996. I237.
Full Journal Title: 69th Scientific Sessions of the American Heart Association, New Orleans, Louisiana, USA, November 10-13, 1996. Circulation
ISSN: 0009-7322
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 049 Iss. 001 Ref. 004858

6/3/10 (Item 10 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13292324 BIOSIS Number: 99292324
Enhanced CD34 expression of sinusoid-like vascular endothelial cells in hepatocellular carcinoma
Cui S; Hano H; Sakata A; Harada T; Liu T; Takai S; Ushigome S
Dep. Pathol., Jikei Univ. Sch. Med., 3-25-8 Nishi-Shinbashi, Minato-ku, Tokyo 105, Japan
Pathology International 46 (10). 1996. 751-756.
Full Journal Title: Pathology International
ISSN: 1320-5463
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 001 Ref. 007796

6/3/11 (Item 11 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13287708 BIOSIS Number: 99287708
Cell autonomous functions of the receptor tyrosine kinase TIE in a late phase of angiogenic capillary growth and endothelial cell survival during murine development
Partanen J; Puri M C; Schwartz L; Fischer K-D; Bernstein A; Rossant J
Programs Mol. Biol. Cancer, Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., 600 University Ave., Toronto, ON M5G 1X5, Canada
Development (Cambridge) 122 (10). 1996. 3013-3021.
Full Journal Title: Development (Cambridge)
ISSN: 0950-1991
Language: ENGLISH
Print Number: Biological Abstracts Vol. 103 Iss. 001 Ref. 003180

6/3/12 (Item 12 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13257097 BIOSIS Number: 99257097
Embryonic stem cells differentiate in vitro to endothelial cells through successive maturation steps
Vittet D; Prandini M-H; Berthier R; Schweitzer A; Martin-Sisteron H; Uzan G; Dejana E
INSERM U217, DBMS/HEM, CENG, 17 rue des Martyrs, 38054 Grenoble cedex 9, France
Blood 88 (9). 1996. 3424-3431.
Full Journal Title: Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 012 Ref. 172727

6/3/13 (Item 13 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13197067 BIOSIS Number: 99197067
Regulation of flt-1 expression during mouse embryogenesis suggests a role in the establishment of vascular endothelium

Fong G-H; Klingensmith J; Wood C R; Rossant J; Breitman M L
Lawson Res. Inst., St. Joseph's Health Centre, 268 Grosvenor St., London, ON N6A 4V2, Canada
Developmental Dynamics 207 (1). 1996. 1-10.
Full Journal Title: Developmental Dynamics
ISSN: 1058-8388
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 009 Ref. 129074

6/3/14 (Item 14 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13155009 BIOSIS Number: 99155009
Neovascularization in human germ cell tumors correlates with a marked increase in the expression of the vascular endothelial growth factor but not the placenta-derived growth factor
Viglietto G; Romano A; Maglione D; Rambaldi M; Paoletti I; Lago C T; Califano D; Monaco C; Mineo A; Santelli G; Manzo G; Botti G; Chiappetta G; Persico M G
Ist. Nazionale Tumori, "Fondazione Senatore Pascale", Via M. Semmola, 80131 Naples, Italy
Oncogene 13 (3). 1996. 577-587.
Full Journal Title: Oncogene
ISSN: 0950-9232
Language: ENGLISH
Print Number: Biological Abstracts Vol. 102 Iss. 007 Ref. 103140

6/3/15 (Item 15 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

13114955 BIOSIS Number: 99114955
Differentiation of vascular endothelial cells and megakaryocytes from mouse embryonic stem cells transferred with TGF-beta gene (ES-T)
Zhang X J; Tsung H-C; Li X L; Yao Z; Han Z C
Shanghai Inst. Cell Biol., Acad. Sinica, Paris, France
British Journal of Haematology 93 (SUPPL. 2). 1996. 148.
Full Journal Title: Second Meeting of the European Haematology Association, Paris, France, May 29-June 1, 1996. British Journal of Haematology
ISSN: 0007-1048
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 009 Ref. 152532

6/3/16 (Item 16 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12226586 BIOSIS Number: 98826586
Endothelial area as a prognostic indicator for invasive breast carcinoma
Simpson J F; Ahn C; Battifora H; Esteban J M
Dep. Pathol., City of Hope Natl. Med. Cent., 1500 East Duarte Road, Duarte, CA 91010, USA

Cancer 77 (10). 1996. 2077-2085.
Full Journal Title: Cancer
ISSN: 0008-543X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 012 Ref. 177008

6/3/17 (Item 17 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12175630 BIOSIS Number: 98775630
Heterozygous embryonic lethality induced by targeted inactivation of the VEGF gene
Ferrara N; Carver-Moore K; Chen H; Dowd M; Lu L; O'Shea K S; Powell-Braxton L; Hillan K J; Moore M W
Dep. Cardiovasc. Res., Genentech Inc., 460 Point San Bruno Boulevard, South San Francisco, CA 94080, USA
Nature (London) 380 (6573). 1996. 439-442.
Full Journal Title: Nature (London)
ISSN: 0028-0836
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 010 Ref. 142822

6/3/18 (Item 18 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12074342 BIOSIS Number: 98674342
Myeloid progenitor cell regulatory effects of vascular endothelial cell growth factor
Broxmeyer H E; Cooper S; Li Z H; Lu L; Song H-Y; Kwon B S; Warren R E; Donner D B
Walther Oncol. Cent., Indiana Univ. Sch. Med., 975 West Walnut St., Room 501, Indianapolis, IN 46202, USA
International Journal of Hematology 62 (4). 1995. 203-215.
Full Journal Title: International Journal of Hematology
ISSN: 0925-5710
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 006 Ref. 074623

6/3/19 (Item 19 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12038023 BIOSIS Number: 98638023
Time course of increased cellular proliferation in collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S; Rossow S T; Kearney M; Zheng L P; Bauters C; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., 736 Cambridge Street, Boston, MA 02135, USA
American Journal of Pathology 147 (6). 1995. 1649-1660.
Full Journal Title: American Journal of Pathology
ISSN: 0002-9440
Language: ENGLISH

Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 053768

6/3/20 (Item 20 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12028907 BIOSIS Number: 98628907
The receptor tyrosine kinase TIE is required for integrity and survival of vascular endothelial cells
Puri M C; Rossant J; Alitalo K; Bernstein A; Partanen J
Program Molecular Biology, Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., 600 University Avenue, Toronto, ON M5G 1X5, Canada
EMBO (European Molecular Biology Organization) Journal 14 (23). 1995. 5884-5891.
Full Journal Title: EMBO (European Molecular Biology Organization) Journal
ISSN: 0261-4189
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 044652

6/3/21 (Item 21 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12024050 BIOSIS Number: 98624050
Dose-dependent induction of endothelial cells from embryonic stem cells using vascular permeability factor (VPF-VEGF)
Reimer C L; Van De Water L
Dep. Pathol., Beth Israel Hosp., Harv. Med. Sch., Boston, MA, USA
Molecular Biology of the Cell 6 (SUPPL.). 1995. 10A.
Full Journal Title: Thirty-fifth Annual Meeting of the American Society for Cell Biology, Washington, D.C., USA, December 9-13, 1995. Molecular Biology of the Cell
ISSN: 1059-1524
Language: ENGLISH
Document Type: CONFERENCE PAPER
Print Number: Biological Abstracts/RRM Vol. 048 Iss. 002 Ref. 028393

6/3/22 (Item 22 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12011387 BIOSIS Number: 98611387
Synergistic effect of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in vivo
Asahara T; Bauters C; Zheng L P; Takeshita S; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Med. Cent., Med. Off. Build., 11 Nevins St. Suite No. 306, Boston, MA 02135, USA
Circulation 92 (9 SUPPL.). 1995. II365-II371.
Full Journal Title: Circulation
ISSN: 0009-7322
Language: ENGLISH
Print Number: Biological Abstracts Vol. 101 Iss. 003 Ref. 039092

6/3/23 (Item 23 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11914318 BIOSIS Number: 98514318
Cloning and functional analysis of the promoter for KDR-flk-1, a receptor for vascular endothelial growth factor
Patterson C; Perrella M A; Hsieh C-M; Yoshizumi M; Lee M-E; Haber E
Build. 2, Cardiovascular Biol. Lab., Harvard Sch. Public Health, 677 Huntington Ave., Boston, MA 02115, USA
Journal of Biological Chemistry 270 (39). 1995. 23111-23118.
Full Journal Title: Journal of Biological Chemistry
ISSN: 0021-9258
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 011 Ref. 165175

6/3/24 (Item 24 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11802916 BIOSIS Number: 98402916
Failure of blood-island formation and vasculogenesis in Flk-1-deficient mice
Shalaby F; Rossant J; Yamaguchi T P; Gertsenstein M; Wu X-F; Breitman M L ; Schuh A C
Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., 600 University Avenue, Toronto, ON M5G 1X5, Canada
Nature (London) 376 (6535). 1995. 62-66.
Full Journal Title: Nature (London)
ISSN: 0028-0836
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 006 Ref. 080508

6/3/25 (Item 25 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11730387 BIOSIS Number: 98330387
Angiogenic properties of human immunodeficiency virus type 1 Tat protein
Albini A; Barillari G; Benelli R; Gallo R C; Ensoli B
Lab. Tumor Cell Biol., Build. 37, Room 6A09, Natl. Cancer Inst., 37 Convent Drive, Bethesda, MD 20892-4255, USA
Proceedings of the National Academy of Sciences of the United States of America 92 (11). 1995. 4838-4842.
Full Journal Title: Proceedings of the National Academy of Sciences of the United States of America
ISSN: 0027-8424
Language: ENGLISH
Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 038111

6/3/26 (Item 26 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11589492 BIOSIS Number: 98189492
Increased Stem Cell Factor Release by Hemangioma-Derived Endothelial Cells
Meininger C J; Brightman S E; Kelly K A; Zetter B R
Dep. Med. Physiol., Texas A and M Univ. Health Sci. Cent., Reynolds Medical Build., Room 345, College Station, TX 77843-1114, USA
Laboratory Investigation 72 (2). 1995. 166-173.
Full Journal Title: Laboratory Investigation
ISSN: 0023-6837
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 009 Ref. 129795

6/3/27 (Item 27 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11556473 BIOSIS Number: 98156473
Differential endothelial staining of the human hematopoietic progenitor cell antigen (CD34) and factor VIII antigen: Utility in microvessel (angiogenesis) identification in bladder carcinoma
Bochner B H; Nichols P W; Groshen S; Skinner D G; Cote R J
Los Angeles, CA, USA
Modern Pathology 8 (1). 1995. 73A.
Full Journal Title: Annual Meeting of the United States and Canadian Academy of Pathology, Toronto, Ontario, Canada, March 11-17, 1995. Modern Pathology
ISSN: 0893-3952
Language: ENGLISH
Print Number: Biological Abstracts/RRM Vol. 047 Iss. 004 Ref. 059194

6/3/28 (Item 28 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11518954 BIOSIS Number: 98118954
The sialomucin CD34 is expressed on hematopoietic cells and blood vessels during murine development
Young P E; Baumhueter S; Lasky L A
Dep. Immunol., Genentech Inc., 460 Pt San Bruno Blvd., South San Francisco, CA 94080, USA
Blood 85 (1). 1995. 96-105.
Full Journal Title: Blood
ISSN: 0006-4971
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 006 Ref. 075511

6/3/29 (Item 29 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

11488800 BIOSIS Number: 98088800
Transformation of fibroblasts into endothelial cells during angiogenesis
Kon K; Fujiwara T
Lab. Animal Center, Sch. Med., Ehime Univ., Shigenobu, Ehime 791-02, Japan

Cell & Tissue Research 278 (3). 1994. 625-628.
Full Journal Title: Cell & Tissue Research
ISSN: 0302-766X
Language: ENGLISH
Print Number: Biological Abstracts Vol. 099 Iss. 005 Ref. 059210

6/3/30 (Item 30 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10990046 BIOSIS Number: 97190046
B94, a primary response gene inducible by tumor necrosis factor-alpha, is expressed in developing hematopoietic tissues and the sperm acrosome
Wolf F W; Sarma V; Sweldin M; Drake S; Suchard S J; Shao H; O'Shea K S; Dixit V M
Univ. Michigan Med. Sch., Dep. Pathol., 1301 Catherine St., Ann Arbor, MI 48109-0602, USA
Journal of Biological Chemistry 269 (5). 1994. 3633-3640.
Full Journal Title: Journal of Biological Chemistry
ISSN: 0021-9258
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 009 Ref. 123735

6/3/31 (Item 31 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10978221 BIOSIS Number: 97178221
Therapeutic angiogenesis: A single intraarterial bolus of vascular endothelial growth factor augments revascularization in a rabbit ischemic hind limb model
Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M
St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA
Journal of Clinical Investigation 93 (2). 1994. 662-670.
Full Journal Title: Journal of Clinical Investigation
ISSN: 0021-9738
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

6/3/32 (Item 32 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10964614 BIOSIS Number: 97164614
Regulation of vasculogenesis and angiogenesis
Risau W
Max-Planck-Inst., D-61231 Bad Nauheim, GER
Journal of Cellular Biochemistry Supplement 0 (18 PART A). 1994. 260.
Full Journal Title: Keystone Symposium on Inflammation, Growth Regulatory Molecules and Atherosclerosis, Keystone, Colorado, USA, January 16-23, 1994. Journal of Cellular Biochemistry Supplement
ISSN: 0733-1959
Language: ENGLISH
Document Type: CONFERENCE PAPER

Print Number: Biological Abstracts/RRM Vol. 046 Iss. 004 Ref. 061215

6/3/33 (Item 33 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10477528 BIOSIS Number: 96077528
ENDOTHELIAL TRANSDIFFERENTIATED PHENOTYPE AND CELL-CYCLE KINETICS OF AIDS-ASSOCIATED KAPOSI SARCOMA CELLS
WAY D L; WITTE M H; FIALA M; RAMIREZ G; NAGLE R B; BERNAS M J; DICTOR M; BORGS P; WITTE C L
UNIV. ARIZ., COLL. MED., 1501 N. CAMPBELL AVE., TUCSON, AZ 85724, USA.
LYMPHOLOGY 26 (2). 1993. 79-89. CODEN: LYMPB
Full Journal Title: Lymphology
Language: ENGLISH

6/3/34 (Item 34 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10463065 BIOSIS Number: 96063065
FLK-1 AN FLT-RELATED RECEPTOR TYROSINE KINASE IS AN EARLY MARKER FOR ENDOTHELIAL CELL PRECURSORS
YAMAGUCHI T P; DUMONT D J; CONLON R A; BREITMAN M L; ROSSANT J
SAMUEL LUNENFELD RES. INST., MOUNT SINAI HOSP., TORONTO, ON, CAN., M5G 1X5.
DEVELOPMENT (CAMB) 118 (2). 1993. 489-498. CODEN: DEVPE
Full Journal Title: DEVELOPMENT (Cambridge)
Language: ENGLISH

6/3/35 (Item 35 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10401812 BIOSIS Number: 96001812
HIGH AFFINITY VEGF BINDING AND DEVELOPMENTAL EXPRESSION SUGGEST FLK-1 AS A MAJOR REGULATOR OF VASCULOGENESIS AND ANGIOGENESIS
MILLAUER B; WIZIGMANN-VOOS S; SCHNURCH H; MARTINEZ R; MOLLER N P H; RISAU W; ULLRICH A
DEP. MOLECULAR BIOL., MAX PLANCK INSTITUTE BIOCHEMISTRY, AN KLOPFERSPITZ 18A, 8033 MARTINSRIED, GERMANY.
CELL 72 (6). 1993. 835-846. CODEN: CELLB
Full Journal Title: Cell
Language: ENGLISH

6/3/36 (Item 36 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7697059 BIOSIS Number: 90065059
LEUKOCYTE ANTIGEN CD34 IS EXPRESSED BY A SUBSET OF CULTURED ENDOTHELIAL CELLS AND ON ENDOTHELIAL ABLUMINAL MICROPROCESSES IN THE TUMOR STROMA
SCHLINGEMANN R O; RIETVELD F J R; DE WAAL R M W; BRADLEY N J; SKENE A I; DAVIES A J S; GREAVES M F; DENEKAMP J; RUITER D J

DEP. PATHOL., UNIV. HOSP. NIJMEGEN, P.O. BOX 9101, 6500 HB NIJMEGEN, NETH.
LAB INVEST 62 (6). 1990. 690-696. CODEN: LAINA
Full Journal Title: Laboratory Investigation
Language: ENGLISH

6/3/37 (Item 37 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7594628 BIOSIS Number: 39107235
ROLE OF GROWTH FACTORS IN THE DEVELOPMENT OF THE VASCULAR SYSTEM
RISAU W
MAX-PLANCK-INSTITUT FUER PSYCHIATRIE, AM KLOPFERSPITZ 18A, D-8033 MARTINSRIED, W. GER.
SYMPOSIUM ON TISSUE ENGINEERING HELD AT THE 19TH ANNUAL UCLA (UNIVERSITY OF CALIFORNIA-LOS ANGELES) SYMPOSIA ON MOLECULAR AND CELLULAR BIOLOGY, KEYSTONE, COLORADO, USA, APRIL 6-12, 1990. J CELL BIOCHEM SUPPL 0 (14 PART E). 1990. 234. CODEN: JCBSD
Language: ENGLISH
Document Type: CONFERENCE PAPER

6/3/38 (Item 38 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7405733 BIOSIS Number: 89056752
FETAL VASCULOGENESIS AND ANGIOGENESIS IN HUMAN PLACENTAL VILLI
DEMIR R; KAUFMANN P; CASTELLUCCI M; ERBENGI T; KOTOWSKI A
DEP. ANAT., RWTH, MELATENER STRASSE 211, D-5100 AACHEN, WEST GERMANY.
ACTA ANAT 136 (3). 1989. 190-203. CODEN: ACATA
Full Journal Title: Acta Anatomica
Language: ENGLISH

6/3/39 (Item 39 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

7063165 BIOSIS Number: 87123686
RELATIONSHIP BETWEEN VASCULOGENESIS ANGIOGENESIS AND HEMOPOIESIS DURING AVIAN ONTOGENY
PARDANAUD L; YASSINE F; DIETERLEN-LIEVRE F
INST. EMBRYOL. CELLULAIRE MOLECULAIRE, CNRS, 94736 NOGENT SUR MARNE CEDEX, FR.
DEVELOPMENT (CAMB) 105 (3). 1989. 473-486. CODEN: DEVPE
Full Journal Title: DEVELOPMENT (Cambridge)
Language: ENGLISH

6/3/40 (Item 40 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

6519099 BIOSIS Number: 85119620
VASCULOGENESIS AND ANGIOGENESIS IN EMBRYONIC-STEM-CELL-DERIVED EMBRYOID

BODIES
RISAU W; SARIOLA H; ZERWES H-G; SASSE J; EKBLOM P; KEMLER R; DOETSCHMAN T
MAX-PLANCK-INST. ENTWICKLUNGSBIOLOGIE, SPEMANNSTRASSE 35-39, 7400 TUEBINGEN, W. GER.
DEVELOPMENT (CAMB) 102 (3). 1988. 471-478. CODEN: DEVPE
Full Journal Title: DEVELOPMENT (Cambridge)
Language: ENGLISH

6/3/41 (Item 41 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

5322116 BIOSIS Number: 81089423
ANGIOGENESIS IN ORGANIZING THROMBI NEW FINDINGS
FEIGL W; LEU H J; LINTNER F; PEDIO G; SUSANI M
INSTITUT, ALLG. POLIKLINIK DER STADT WIEN, MARIANNENGASSE 10, A-1090 WIEN.
VASA 14 (4). 1985 (RECD. 1986). 371-378. CODEN: VASAA
Full Journal Title: Vasa
Language: GERMAN

6/3/42 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

10168376 EMBASE No: 96348565
Erythropoiesis and vasculogenesis in embryoid bodies lacking visceral yolk sac endoderm
Bielinska M.; Narita N.; Heikinheimo M.; Porter S.B.; Wilson D.B.
Department of Pediatrics, Washington Univ. School of Medicine, St. Louis Children's Hospital, One Children's Place, St Louis, MO 63110 USA
Blood (USA) , 1996, 88/10 (3720-3730) CODEN: BLOOA ISSN: 0006-4971
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/43 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

10097003 EMBASE No: 96288421
Flk-1, a receptor for vascular endothelial growth factor (VEGF), is expressed by retinal progenitor cells
Yang X.; Cepko C.L.
Department of Genetics, Howard Hughes Medical Institute, Harvard Medical School, Boston, MA 02115 USA
Journal of Neuroscience (USA) , 1996, 16/19 (6089-6099) CODEN: JNRSD ISSN: 0270-6474
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/44 (Item 3 from file: 72)
DIALOG(R)File 72:EMBASE

10041079 EMBASE No: 96233379
Induction of embryonic vasculogenesis by bFGF and LIF in vitro and in

vivo
Gendron R.L.; Tsai F.-Y.; Paradis H.; Arceci R.J.
Department of Pediatrics, Division of Hematology and Oncology, Child. Hospital Research Foundation, 3333 Burnet Avenue, Cincinnati, OH 45229-3039 USA
Developmental Biology (USA) , 1996, 177/1 (332-346) CODEN: DEBIA ISSN: 0012-1606
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/45 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

9979409 EMBASE No: 96164968
Two distinct endothelial lineages in ontogeny, one of them related to hemopoiesis
Pardanaud L.; Luton D.; Prigent M.; Bourcheix L.-M.; Catala M.; Dieterlen-Lievre F.
Inst. Embryologie Cell. Moleculaire, CNRS, College de France, Ave. de la Belle Gabrielle, 94736 Nogent-sur-Marne Cedex France
Development (United Kingdom) , 1996, 122/5 (1363-1371) CODEN: DEVPE ISSN: 0950-1991
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/46 (Item 5 from file: 72)
DIALOG(R)File 72:EMBASE

9922963 EMBASE No: 96108150
Abnormal blood vessel development and lethality in embryos lacking a single VEGF allele
Carmeliet P.; Ferreira V.; Breier G.; Pollefeyt S.; Kieckens L.; Gertenstein M.; Fahrig M.; Vandenhoeck A.; Harpal K.; Eberhardt C.; Decleucq C.; Pawling J.; Moons L.; Collen D.; Risau W.; Nagy A.
Ctr. Transgene Technol. Gene Therapy, Flanders Interuniversity, Institute for Biotechnology, B-3000 Leuven Belgium
Nature (United Kingdom) , 1996, 380/6573 (435-439) CODEN: NATUA ISSN: 0028-0836
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/47 (Item 6 from file: 72)
DIALOG(R)File 72:EMBASE

9909579 EMBASE No: 96091929
Fibroma of tendon sheath and tendosynovial giant cell tumors are rich in factor XIIIa+ dendrophages
Silverman J.S.; Knapik M.
Pathology/Laboratory Medicine Dept., Southampton Hospital, 240 Mettinghouse Lane, Southampton, NY 11968 USA
Journal of Histotechnology (USA) , 1996, 19/1 (45-53) CODEN: JOHID ISSN: 0147-8885
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/48 (Item 7 from file: 72)
DIALOG(R)File 72:EMBASE

9826454 EMBASE No: 96007672
Blood island formation in attached cultures of murine embryonic stem cells
Bautch V.L.; Stanford W.L.; Rapoport R.; Russell S.; Byrum R.S.; Futch T.A.
Dept. of Biology, University of North Carolina, CB 3280, Chapel Hill, NC 27599 USA
Developmental Dynamics (USA) , 1996, 205/1 (1-12) CODEN: DEDYE ISSN: 1058-8388
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/49 (Item 8 from file: 72)
DIALOG(R)File 72:EMBASE

9811259 EMBASE No: 95367134
Time course of increased cellular proliferation collateral arteries after administration of vascular endothelial growth factor in a rabbit model of lower limb vascular insufficiency
Takeshita S.; Rossow S.T.; Kearney M.; Zheng L.P.; Bauters C.; Bunting S.; Ferrara N.; Symes J.F.; Isner J.M.
St. Elizabeths Medical Center, 736 Cambridge Street, Boston, MA 02135 USA
American Journal of Pathology (USA) , 1995, 147/6 (1649-1660) CODEN: AJPAA ISSN: 0002-9440
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/50 (Item 9 from file: 72)
DIALOG(R)File 72:EMBASE

9536407 EMBASE No: 95103022
New approaches in the treatment of metastatic mammary carcinomas
STAND UND PERSPECTIVEN FUR DIE BEHANDLUNG DES METASTASIERTEN MAMMAKARZINOMS
Unger C.; Marme D.
Klinik fur Tumorbiologie, Albert-Ludwigs-Universitat, Breisacher Strasse 119, D-79011 Freiburg Germany
Schweizerische Rundschau fur Medizin/Praxis (Switzerland) , 1995, 84/13 (390-394) CODEN: SRMPD ISSN: 0369-8394
LANGUAGES: German SUMMARY LANGUAGES: English; German; French

6/3/51 (Item 10 from file: 72)
DIALOG(R)File 72:EMBASE

9329688 EMBASE No: 94279673
Dominant-negative and targeted null mutations in the endothelial receptor tyrosine kinase, tek, reveal a critical role in vasculogenesis of the embryo
Dumont D.J.; Gradwohl G.; Fong G.-H.; Puri M.C.; Gertsenstein M.;

Auerbach A.; Breitman M.L.
Molecular/Developmental Biology Div., Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Ont. Canada
GENES DEV. (USA) , 1994, 8/16 (1897-1909) CODEN: GEDEE ISSN: 0890-9369
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/52 (Item 11 from file: 72)
DIALOG(R)File 72:EMBASE

9258185 EMBASE No: 94206283
Heparin modulates the interaction of VEGF165 with soluble and cell associated flk-1 receptors
Tessler S.; Rockwell P.; Hicklin D.; Cohen T.; Levi B.-Z.; Witte L.; Lemischka I.R.; Neufeld G.
Department of Biology, Israel Institute of Technology, Haifa 32000 Israel
J. BIOL. CHEM. (USA) , 1994, 269/17 (12456-12461) CODEN: JBCHA ISSN: 0021-9258
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/53 (Item 12 from file: 72)
DIALOG(R)File 72:EMBASE

9209096 EMBASE No: 94147090
Myogenic cells in the rat embryonic brain stem
De Vitry F.; Hillion J.; Catelon J.; Gros F.
Laboratoire de Biochimie Cellulaire, CNRS-URA 1115, College de France, 11, Place Marcelin Berthelot, 75231 Paris Cedex 05 France
C. R. ACAD. SCI. SER. III (France) , 1994, 317/4 (332-340) CODEN: CRASE ISSN: 0764-4469
LANGUAGES: English SUMMARY LANGUAGES: English; French

6/3/54 (Item 13 from file: 72)
DIALOG(R)File 72:EMBASE

8988412 EMBASE No: 93292184
Embryonic stem cell model systems for vascular morphogenesis and cardiac disorders
Doetschman T.; Shull M.; Kier A.; Coffin J.D.
Department of Molecular Genetics, Cincinnati Univ. College of Medicine, Cincinnati, OH 45267-0524 USA
HYPERTENSION (USA) , 1993, 22/4 (618-629) CODEN: HPRTD ISSN: 0194-911X
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/55 (Item 14 from file: 72)
DIALOG(R)File 72:EMBASE

8956241 EMBASE No: 93259964
Development of human peribiliary capillary plexus: A lectin-histochemical and immunohistochemical study

Terada T.; Nakanuma Y.
Second Department of Pathology, Kanazawa University Sch. of Medicine, Kanazawa 920 Japan
HEPATOLOGY (USA) , 1993, 18/3 (529-536) CODEN: HPTLD ISSN: 0270-9139
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/56 (Item 15 from file: 72)
DIALOG(R)File 72:EMBASE

8910279 EMBASE No: 93214049
Flk-1, an fit-related receptor tyrosine kinase is an early marker for endothelial cell precursors
Yamaguchi T.P.; Dumont D.J.; Conlon R.A.; Breitman M.L.; Rossant J.
Samuel Lunenfeld Research Instltute, Mount Sinai Hospital, Toronto, Ont. M5G 1X5 Canada
DEVELOPMENT (United Kingdom) , 1993, 118/2 (489-498) CODEN: DEVPE ISSN: 0950-1991
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/57 (Item 16 from file: 72)
DIALOG(R)File 72:EMBASE

8821673 EMBASE No: 93125395
Embryology of the vascular system
L'EMBRYOLOGIE DES VAISSEAUX
Dieterlen-Lievre F.; Pardanaud L.
Inst. d'Embryol. Cellulaire/Molecul., CNRS, College de France, 49 bis, Avenue de la Belle-Gabrielle, F-94736 Nogent-sur-Marne Cedex France
ANN. CARDIOL. ANGEIOL. (France) , 1993, 42/2 (A.5-A.12) CODEN: ACAAB ISSN: 0003-3928
LANGUAGES: French SUMMARY LANGUAGES: English; French

6/3/58 (Item 17 from file: 72)
DIALOG(R)File 72:EMBASE

8643755 EMBASE No: 92324311
Retroviral analysis of cardiac morphogenesis: Discontinuous formation of coronary vessels
Mikawa T.; Fischman D.A.
Department of Cell Biology/Anatomy, Cornell University Medical College, 1300 York Avenue, New York, NY 10021 USA
PROC. NATL ACAD. SCI. U. S. A. (USA) , 1992, 89/20 (9504-9508) CODEN: PNASA ISSN: 0027-8424
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/59 (Item 18 from file: 72)
DIALOG(R)File 72:EMBASE

8414923 EMBASE No: 92091112
Embryonic stem cell-derived cystic embryoid bodies form vascular

channels: An in vitro model of blood vessel development
Wang R.; Clark R.; Bautch V.L.
Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599 USA
DEVELOPMENT (United Kingdom) , 1992, 114/2 (303-316) CODEN: DEVPE ISSN: 0950-1991
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/60 (Item 19 from file: 72)
DIALOG(R)File 72:EMBASE

7616476 EMBASE No: 90045449
Fetal vasculogenesis and angiogenesis in human placental villi1
Demir R.; Kaufmann P.; Castellucci M.; Erbengi T.; Kotowski A .
Department of Histology and Embryology, Faculty of Medicine, Akdeniz University, Antalya Turkey
ACTA ANAT. (Switzerland) , 1989, 136/3 (190-203) CODEN: ACATA ISSN: 0001-5180
LANGUAGES: English

6/3/61 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09101057 97286336
Vascular development: cellular and molecular regulation.
Beck L Jr; D'Amore PA
Department of Pathology, Harvard Medical School, Children's Hospital, Boston, Massachusetts 02115, USA.
FASEB J (UNITED STATES) Apr 1997, 11 (5) p365-73, ISSN 0892-6638 Journal Code: FAS
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW LITERATURE

6/3/62 (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09044026 97183746
Angiogenic induction and cell migration in an orthopaedically expanded maxillary suture in the rat.
Chang HN; Garetto LP; Katona TR; Potter RH; Roberts WE
Department of Oral Facial Development, School of Dentistry, Indiana University, Indianapolis 46202, USA.
Arch Oral Biol (ENGLAND) Oct 1996, 41 (10) p985-94, ISSN 0003-9969 Journal Code: 83M
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/63 (Item 3 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08919670 97141787
Inhibition of angiogenesis and breast cancer in mice by the microtubule inhibitors 2-methoxyestradiol and taxol.
Klauber N; Parangi S; Flynn E; Hamel E; D'Amato RJ
Department of Surgery, Children's Hospital, Boston, Massachusetts 02115, USA.
Cancer Res (UNITED STATES) Jan 1 1997, 57 (1) p81-6, ISSN 0008-5472 Journal Code: CNF
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/64 (Item 4 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08907881 97126252
Inhibition of angiogenesis in human glioblastomas by chromosome 10 induction of thrombospondin-1.
Hsu SC; Volpert OV; Steck PA; Mikkelsen T; Polverini PJ; Rao S; Chou P; Bouck NP
Department of Microbiology-Immunology, R.H. Lurie Cancer Center, Northwestern University Medical School, Chicago, Illinois 60611, USA.
Cancer Res (UNITED STATES) Dec 15 1996, 56 (24) p5684-91, ISSN 0008-5472 Journal Code: CNF
Contract/Grant No.: CA52750, CA, NCI; CA56041, CA, NCI; HL39926, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/65 (Item 5 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08519483 96100386
The angiogenic potentials of the cephalic mesoderm and the origin of brain and head blood vessels.
Couly G; Coltey P; Eichmann A; Le Douarin NM
Institut d'Embryologie Cellulaire et Moleculaire du CNRS et du College de France, UMR 9924, Nogent-sur-Marne, France.
Mech Dev (IRELAND) Sep 1995, 53 (1) p97-112, ISSN 0925-4773 Journal Code: AXF
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/66 (Item 6 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08514180 96105623
Insulin stimulates the expression of basic fibroblast growth factor in rat brown adipocyte primary culture.
Yamashita H; Oh-ishi S; Kizaki T; Nagasawa J; Saitoh D; Ohira Y; Ohno H
Department of Hygiene, National Defense Medical College, Tokorozawa/Japan.
Eur J Cell Biol (GERMANY) Sep 1995, 68 (1) p8-13, ISSN 0171-9335

Journal Code: EM7
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/67 (Item 7 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08400034 95224442
[Are there alternative forms of therapy in breast carcinoma? Status and perspectives for the treatment of metastasized breast carcinoma]
Gibt es alternative Therapieformen beim Mammakarzinom? Stand und Perspektiven fur die Behandlung des metastasierten Mammakarzinoms.
Unger C; Marme D
Klinik fur Tumorbiologie, Albert-Ludwigs-Universitat Freiburg.
Schweiz Rundsch Med Prax (SWITZERLAND) Mar 28 1995, 84 (13) p390-4, ISSN 0369-8394 Journal Code: SRM
Languages: GERMAN Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract

6/3/68 (Item 8 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08386038 94331580
Autocrine and paracrine roles for growth factors in melanoma.
Shih IM; Herlyn M
Wistar Institute, Philadelphia, Pennsylvania 19104.
In Vivo (GREECE) Jan-Feb 1994, 8 (1) p113-23, ISSN 0258-851X Journal Code: A6F
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, ACADEMIC

6/3/69 (Item 9 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08378470 94173109
Angiogenic factors are hematopoietic growth factors and vice versa.
Bikfalvi A; Han ZC
INSERM U 118, Paris, France.
Leukemia (ENGLAND) Mar 1994, 8 (3) p523-9, ISSN 0887-6924 Journal Code: LEU
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

6/3/70 (Item 10 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08062628 95042611
In vitro studies on the existence of endothelial precursor cells in the subectodermal avascular region of quail wing buds.
Seifert R

Ruhr-Universitat Bochum, Abteilung fur Anatomie und Embryologie, Germany.
Cell Tissue Res (GERMANY) Sep 1994, 277 (3) p549-55, ISSN 0302-766X
Journal Code: CQD
Contract/Grant No.: NICHD NO1-HD-2-3144, HD, NICHD
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/71 (Item 11 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07932060 94259720
Apolipoprotein E: a potent inhibitor of endothelial and tumor cell proliferation.
Vogel T; Guo NH; Guy R; Drezlich N; Krutzsch HC; Blake DA; Panet A; Roberts DD
Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20892.
J Cell Biochem (UNITED STATES) Mar 1994, 54 (3) p299-308, ISSN 0730-2312 Journal Code: HNF
Contract/Grant No.: R01 EY09092, EY, NEI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/72 (Item 12 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07547236 93263568
[Embryology of vessels]
L'embryologie des vaisseaux.
Dieterlen-Lievre F; Pardanaud L
Institut d'Embryologie Cellulaire et Moleculaire du CNRS, College de France, Nogent-sur-Marne.
Ann Cardiol Angeiol (Paris) (FRANCE) Feb 1993, 42 (2) pA5-12, ISSN 0003-3928 Journal Code: 502
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract

6/3/73 (Item 13 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07417771 92329734
Capillary growth: a two-cell system.
D'Amore PA
Department of Surgery, Children's Hospital, Boston, MA 02115.
Semin Cancer Biol (UNITED STATES) Apr 1992, 3 (2) p49-56, ISSN 1044-579X Journal Code: A6Y
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

6/3/74 (Item 14 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07073279 92136705
Pericytes as a supplementary source of osteoblasts in periosteal osteogenesis.
Diaz-Flores L; Gutierrez R; Lopez-Alonso A; Gonzalez R; Varela H
Department of Pathology, La Laguna University, Canary Islands, Spain.
Clin Orthop (UNITED STATES) Feb 1992, (275) p280-6, ISSN 0009-921X Journal Code: DFY
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/75 (Item 15 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07051196 91288073
[Metastatic dissemination of cancer cells]
Dissemination metastatique des cellules cancereuses.
Cornil I; Theodorescu D; Kerbel RS; Poupon MF
Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada.
Pathol Biol (Paris) (FRANCE) Apr 1991, 39 (4) p300-7, ISSN 0369-8114 Journal Code: OSG
Languages: FRENCH Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL English Abstract

6/3/76 (Item 16 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

07050667 91277020
Extracellular matrix-resident basic fibroblast growth factor: implication for the control of angiogenesis.
Vlodavsky I; Fuks Z; Ishai-Michaeli R; Bashkin P; Levi E; Korner G; Bar-Shavit R; Klagsbrun M
Department of Oncology, Hadassah-Hebrew University Hospital, Jerusalem, Israel.
J Cell Biochem (UNITED STATES) Feb 1991, 45 (2) p167-76, ISSN 0730-2312 Journal Code: HNF
Contract/Grant No.: CA-30289, CA, NCI; CA-37392, CA, NCI
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

6/3/77 (Item 17 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

06855700 92038454
Angioblast differentiation and morphogenesis of the vascular endothelium in the mouse embryo.
Coffin JD; Harrison J; Schwartz S; Heimark R
Department of Pathology, University of Washington, Seattle 98115.
Dev Biol (UNITED STATES) Nov 1991, 148 (1) p51-62, ISSN 0012-1606

Journal Code: E7T
Contract/Grant No.: HL-18645, HL, NHLBI; HL-26405, HL, NHLBI; HL-45335-03, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/78 (Item 18 from file: 154)
DIALOG(R)File 154:MEDLINE(R)
(c) format only 1997 Knight-Ridder Info. All rts. reserv.

06042847 90094568
Early haemopoietic stem cells in the avian embryo.
Dieterlen-Lievre F; Pardanaud L; Yassine F; Cormier F
Institut d'embryologie Cellulaire et Moleculaire du CNRS, Nogent s/Marne, France.
J Cell Sci Suppl (ENGLAND) 1988, 10 p29-44, ISSN 0269-3518
Journal Code: HNG
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, ACADEMIC

6/3/79 (Item 19 from file: 154)
DIALOG(R)File 154:MEDLINE(R)
(c) format only 1997 Knight-Ridder Info. All rts. reserv.

05989630 90002309
The response of the microvascular system to radiation: a review.
Baker DG; Krochak RJ
Division of Radiation Oncology, University of Virginia Medical Center, Charlottesville 22908.
Cancer Invest (UNITED STATES) 1989, 7 (3) p287-94, ISSN 0735-7907
Journal Code: CAI
Languages: ENGLISH
Document type: JOURNAL ARTICLE; REVIEW; REVIEW, TUTORIAL

6/3/80 (Item 20 from file: 154)
DIALOG(R)File 154:MEDLINE(R)
(c) format only 1997 Knight-Ridder Info. All rts. reserv.

04946534 86270354
[Osteogenic precursor cells in repair osteogenesis]
K voprosu ob osteogennykh kletkakh-predshestvennikakh pri reparativnom osteogeneze.
Mikhailova LN; Pal'tsyn AA
Biull Eksp Biol Med (USSR) Jun 1986, 101 (6) p755-7, ISSN 0365-9615
Journal Code: A74
Languages: RUSSIAN Summary Languages: ENGLISH
Document type: JOURNAL ARTICLE English Abstract
?

This control is presumed to **stem** from the basic dependence of these diseases, and others like them, on blood vessels for nourishment and support. The growth and replication of the **endothelial** cells that line the blood vessels and the smooth muscle cells that surround the blood vessels appears to be modulated by an expanding family of GFs. The growth factors that stimulate **endothelial** cells have a strong affinity for heparin. As such, the effects of heparin and heparin avid growth factors and their. . .

DETDESC:

DETD(3)

Fibroblast . . . and basic) are 154-amino acid polypeptides blocked at the amino terminus. They are believed to play a major role in **angiogenesis**, response to injury and tissue repair. A more detailed discussion of various FGFs and related growth factors is presented by. . .

US PAT NO: 4,808,402 [IMAGE AVAILABLE] L3: 9 of 9

ABSTRACT:
Tumor necrosis factors possess the unexpected ability to induce **angiogenesis**, or neovascularization. Novel methods and TNF-containing compositions and articles are provided for the induction of neovascularization and rapid wound healing.

SUMMARY:

BSUM(2)

Neovascularization, also known as **angiogenesis**, is a complex process involving several sequential steps including basement membrane degradation, endothelial cell mobilization and proliferation, vessel canalization, and. . . [1980]). A variety of mediators, both tumor- and nontumor-derived, appear capable of initiating portions of this reaction sequence (Auerbach, R., "**Angiogenesis**-Inducing Factors: A Review" in Lymphokines, Vol. 4, edited by Pick, E., p. 69, New York Academic Press, [1981] and Bullino,. . . al., "Proc. Natl. Acad. Sci. USA" 82:6409-6413 [1985] and Esch, F. et al., "Proc. Natl. Acad. Sci. USA" 82:6507-6511 [1985]), **angiogenin** (Fett, J. W. et al., "Biochemistry" 24:5480-5486 [1985]), Epidermal Growth Factor (Schreiber, A. B. et al., "Science" 232:1250-1252 [1986]). . . et al., supra). Another growth factor, Transforming Growth Factor -.beta., is potently chemotactic for macrophages and induces their expression of **angiogenic** activity (Wiseman, D. et al., submitted for publication). Macrophages are known to be a component of a number of pathologic. . .

SUMMARY:

BSUM(4)

Macrophages, or monocytes have been associated with **angiogenic** activity, but the molecule(s) responsible for this activity remain largely uncharacterized. Macrophage **angiogenic** activity can be induced by activation of macrophages (Koch, A

. E. et al., "J. Leukocyte

Biol." 39:233-238[1986]). More specifically, macrophages. . . of

several macrophage-like cell lines. Such partially purified preparations possess mitogenic activity for endothelial cells in vitro, as well as **angiogenic** activity in vivo in the corneal neovascularization assay (S. Leibovich, Tissue Repair: Biological and Clinical Aspects of Soft and Hard. . . . have reported that exudate fluid isolated from rabbit skin wounds contains a relatively low molecular weight (2,000 to 14,000 daltons) **angiogenic** activity which may be of macrophage derivation. This material stimulated directional migration of rabbit brain capillary endothelial cells in Boyden. . .

SUMMARY:

BSUM(17)

TNFs . . . these two monokines include: endogenous pyrogenic activity in vivo (Dinarello, C. A. et al., supra), induction of procoagulant activity in **endothelial** cells (Nawroth, P. O. et al., supra and Stern, D. M. et al., "J. Exp. Med." 162:1223 [1985]), stimulation of. . IL-1 does not activate PMN (Bevilacqua, M. P. et al., "J. Clin. Invest." 76:2003-2011 [November 1985]). IL-1 does not inhibit **stem** cell colony formation (Zucali, J. R. et al., "Blood" 69:33-37 [January 1987]).

SUMMARY:

BSUM(19)

In . . . bandages) containing gamma interferon and TNF for use in treating nonmalignant hyperproliferative epidermal growths. Neither citation observes that TNF induces **angiogenesis**, nor is it specifically taught to administer TNF to the surface of a wound.

SUMMARY:

BSUM(23)

Another object of this invention is to provide novel compositions and methods for modulating **angiogenesis**.

SUMMARY:

BSUM(26)

The objects of this Invention are accomplished by a method comprising treating a patient bearing a wound by applying an **angiogenically** active does of a TNF to the wound. The method of this invention facilitates the neovascularization of surgical incisions, burns,. . .

SUMMARY:

BSUM(36)

TNF optionally is supplied with other known **angiogenic** agents such as TGF-.alpha., TGF-.beta., fibroblast growth factor, epidermal growth factor and **angiogenin**, and the **angiogenic** activity of the combinations observed for synergistic effects. TNF optionally also is combined with an with an IFN, e.g. IFN-.gamma., and other cytokines, or may be free of interferons such as IFN-.gamma.. Where such cytokines or

known **angiogenic** agents are species-specific, the appropriate cytokine or agent will be selected for the species to be treated.

SUMMARY:

BSUM(38)

The . . . upon a great number of variables that will be taken into account by the clinician, including the presence of other **angiogenic** agents in the TNF formulations, the nature of the wound to be treated, the condition of the patient, the TNF. . . should be noted that the weight amount will vary for other TNF variants and forms if their molecular weight and/or **angiogenic** potency differ from that of mature human TNF-.alpha.. Potency differences are easily determined by comparing the degree of neovascularization achieved. . .

DETDESC:

DETD(4)

Macrophage-conditioned . . . for 2 hrs. The Immunobeads were removed by centrifugation, and the supernatants concentrated (.times.10), dialyzed against DMEM, and assayed for **angiogenic**, chemotactic and capillary tube forming activity. Control incubations were also performed using normal, non-immune rabbit serum. The results are shown. . .

DETDESC:

DETD(10)

Strong . . . TNF-.alpha.. Below 350 ng, corneas showed no clouding or edema, indicating that inflammation was not a significant component of the **angiogenic** reaction. This was confirmed by histological examination, which also indicated an absence of infiltrating leukocytes. Pellets containing more than 355. . .

DETDESC:

DETD(20)

In order to determine if the **angiogenic** activity produced by activated macrophages in culture was related to TNF-.alpha., a polyclonal antibody to murine TNF-.alpha. was used in an attempt to neutralize biological activity. This antibody completely neutralized the **angiogenic** activity in conditioned medium of thioglycollate-induced peritoneal macrophages, indicating that the macrophage-derived **angiogenic** agent is either identical or immunologically closely related to TNF-.alpha.. This neutralization of activity was demonstrated using the rat cornea,. . .

DETDESC:

DETD(21)

Our data strongly suggest that TNF-.alpha. is a potent mediator of **angiogenesis**, and with activity at concentrations as low as 3.5 ng (approx. 0.2 picomoles) per implant in both the rat cornea. . . (6-10 ng) (Shing, Y. et al., supra; Thomas, K. A. et al., supra; and Esch, F.

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CLAIMS:

CLMS(1)

We claim:

1. A method for accelerating the neovascularization of a wound which comprises applying to the wound an **angiogenically** effective dose of a composition comprising tumor necrosis factor.

CLAIMS:

CLMS(9)

9. . . . 2 further comprising administering to the wound a substance selected from the group of growth factors, antibiotics, debridement agents and **angiogenin**.
=>

US PAT NO: 4,808,402 [IMAGE AVAILABLE] L3: 9 of 9

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CLMS(9)

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=>

10978221 BIOSIS Number: 97178221

Therapeutic angiogenesis: A single intraarterial bolus of vascular **endothelial** growth factor augments revascularization in a rabbit **ischemic** hind limb model

Takeshita S; Zheng L P; Brogi E; Kearney M; Pu L-Q; Bunting S; Ferrara N; Symes J F; Isner J M

St. Elizabeth's Medical Cent., 736 Cambridge St., Boston, MA 02135, USA

Journal of Clinical Investigation 93 (2). 1994. 662-670.

Full Journal Title: Journal of Clinical Investigation

ISSN: 0021-9738

Language: ENGLISH

Print Number: Biological Abstracts Vol. 097 Iss. 008 Ref. 111891

Vascular **endothelial** growth factor (VEGF) is a heparin-binding, **endothelial** cell-specific mitogen. Previous studies have suggested that VEGF is a regulator of naturally occurring physiologic and pathologic angiogenesis. In this study we investigated the hypothesis that the angiogenic potential of VEGF is sufficient to constitute a therapeutic effect. The soluble 165 amino acid isoform of VEGF was administered as a single intraarterial bolus to the internal iliac artery of rabbits in which the ipsilateral femoral artery was excised to induce severe, unilateral hind limb **ischemia** . Doses of 500-1,000 mu-g of VEGF produced statistically significant augmentation of collateral vessel development by angiography as well as the number of capillaries by histology; consequent amelioration of the hemodynamic deficit in the **ischemic** limb was significantly greater in animals receiving VEGF than in nontreated controls (calf blood pressure ratio, 0.75 +- 0.14 vs. 0.48 +- 0.19, P lt 0.05). Serial angiograms disclosed progressive linear extension of the collateral artery of origin (**stem** artery) to the distal point of parent vessel (reentry artery) reconstitution in seven of nine VEGF-treated animals. These findings establish proof of principle for the concept that the angiogenic activity of VEGF is sufficiently potent to achieve therapeutic benefit. Such a strategy might ultimately be applicable to patients with

3/7/2 (Item 2 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10006031 BIOSIS Number: 95006031
THE **CD34** HEMOPOIETIC **PROGENITOR** CELL ASSOCIATED ANTIGEN BIOLOGY AND CLINICAL APPLICATIONS
SILVESTRI F; BANAVALI S; BACCARANI M; PREISLER H D
CATTEDRA DI EMATOLOGIA, ISTITUTO DI MORFOLOGIA SPERIMENTALE CLINICA, POLICLINICO UNIVERSITARIO, P. LE S. MARIA DELLA MISERICODIA, 33100 UDINE, ITALY.
HAEMATOLOGICA 77 (3). 1992. 265-273. CODEN: HAEMA
Full Journal Title: Haematologica
Language: ENGLISH
CD34, which was first detected in hemopoietic and lymphopoietic **progenitors** , is a heavily glycosylated Type I transmembrane protein that does not share any significant similarity with other transmembrane proteins. Its functions are still unknown. Several monoclonal antibodies were raised against **CD34**, and at least 4 different epitopes could be recognized. **CD34** expression is confined to a few cell lines, to 1-4% of adult bone marrow mononuclear cells (including marrow-repopulating marrow-repopulating cells, all multipotent and committed myeloid **progenitors** , B and T lymphoid precursors, osteoclasts precursors, osteoclast precursors, and most likely the precursors for stromal cells), and to less than 1% of peripheral blood mononuclear cells. In non-lymphohemopoietic tissues its expression is confined to **endothelial** cells and to some cells of the skin. In malignancies, **CD34** expression is not yet fully elucidated. Immature hemolymphopoietic malignancies (namely acute leukemias) and the blast cells of chronic myeloid leukemia are frequently positive. Chronic lymphoproliferative disorders and lymphomas are negative. Among other tumors, only vascular derived tumors are positive. Clinical applications of **CD34**+ cells included autologous transplantation of putative **CD34**+ stem cells isolated by positive selection from the bone marrow, and transplantation of autologous peripheral blood stem cells, using the proportion and number of **CD34** + cells as a guideline for the harvesting procedure.

3/7/3 (Item 3 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

9285773 BIOSIS Number: 43030773
MOLECULAR FEATURES OF **CD34** A HEMOPOIETIC **PROGENITOR** CELL-ASSOCIATED MOLECULE
GREAVES M F; BROWN J; MOLGAARD H V; SPURR N K; ROBERTSON D; DELIA D; SUTHERLAND D R
LEUKAEMIA RES. FUND CENT., INST. CANCER RES., CHESTER BEATTY LAB., 237 FULHAM RD., LONDON SW3 6JB, UK.
KEYSTONE SYMPOSIUM ON MOLECULAR AND CELLULAR BIOLOGY-LEUKEMIA: PROGRESS AND CONTROVERSIES, BIG SKY, MONTANA, USA, APRIL 6-12, 1991. LEUKEMIA (BASINGSTOKE) 6 (SUPPL. 1). 1992. 31-36. CODEN: LEUKE
Language: ENGLISH

11/3/5 (Item 5 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

124051327 CA: 124(5)51327y JOURNAL
Vasculogenesis
AUTHOR(S): Risau, Werner; Flamme, Ingo
LOCATION: Max-Planck-Inst. Physiol. Klinische Forschung, Bad Nauheim, Germany, 61231
JOURNAL: Annu. Rev. Cell Dev. Biol. DATE: 1995 VOLUME: 11, PAGES: 73-91 CODEN: ARDBF8 ISSN: 1081-0706 LANGUAGE: English

12027737 BIOSIS Number: 98627737

CD34+ **endothelial** cell lines derived from murine yolk sac induce the proliferation and differentiation of yolk sac CD34+ hematopoietic **progenitors**

Fennie C; Cheng J; Dowbenko D; Young P; Lasky L A

Dep. Molecular Oncol., Genentech Inc., 460 Pt. San Bruno Blvd., South San Francisco, CA 94080, USA

Blood 86 (12). 1995. 4454-4467.

Full Journal Title: Blood

ISSN: 0006-4971

Language: ENGLISH

Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 043482

15/3/18 (Item 18 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10463065 BIOSIS Number: 96063065
FLK-1 AN FLT-RELATED RECEPTOR TYROSINE KINASE IS AN EARLY MARKER FOR **ENDOTHELIAL** CELL PRECURSORS
YAMAGUCHI T P; DUMONT D J; CONLON R A; BREITMAN M L; ROSSANT J
SAMUEL LUNENFELD RES. INST., MOUNT SINAI HOSP., TORONTO, ON, CAN., M5G 1X5.
DEVELOPMENT (CAMB) 118 (2). 1993. 489-498. CODEN: DEVPE
Full Journal Title: DEVELOPMENT (Cambridge)
Language: ENGLISH

15/3/19 (Item 19 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10401812 BIOSIS Number: 96001812
HIGH AFFINITY VEGF BINDING AND DEVELOPMENTAL EXPRESSION SUGGEST **FLK-1** AS A MAJOR REGULATOR OF VASCULOGENESIS AND ANGIOGENESIS
MILLAUER B; WIZIGMANN-VOOS S; SCHNURCH H; MARTINEZ R; MOLLER N P H; RISAU W; ULLRICH A
DEP. MOLECULAR BIOL., MAX PLANCK INSTITUTE BIOCHEMISTRY, AN KLOPFERSPITZ 18A, 8033 MARTINSRIED, GERMANY.
CELL 72 (6). 1993. 835-846. CODEN: CELLB
Full Journal Title: Cell
Language: ENGLISH

15/3/20 (Item 1 from file: 72)
DIALOG(R)File 72:EMBASE

9681441 EMBASE No: 95235838
Interactions between the **Flk-1** receptor, vascular **endothelial** growth factor, and cell surface proteoglycan identified with a soluble receptor reagent
Chiang M.-K.; Flanagan J.G.
Department of Cell Biology, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115 USA
Growth Factors (United Kingdom) , 1995, 12/1 (1-10)
CODEN: GRFAE ISSN: 0897-7194
LANGUAGES: English SUMMARY LANGUAGES: English

15/3/21 (Item 2 from file: 72)
DIALOG(R)File 72:EMBASE

9413865 EMBASE No: 94369142
Signalling properties of FLT4, a proteolytically processed receptor tyrosine kinase related to two VEGF receptors
Pajusola K.; Aprelikova O.; Pelicci G.; Weich H.; Claesson-Welsh L.; Alitalo K.
Molecular-Cancer Biology Laboratory, Department of Pathology, University of Helsinki, 00014 Helsinki Finland

ONCOGENE (United Kingdom) , 1994, 9/12 (3545-3555)
CODEN: ONCNE ISSN: 0950-9232
LANGUAGES: English SUMMARY LANGUAGES: English

15/3/22 (Item 3 from file: 72)
DIALOG(R)File 72:EMBASE

9258185 EMBASE No: 94206283
Heparin modulates the interaction of VEGF165 with soluble and cell associated **flk-1** receptors
Tessler S.; Rockwell P.; Hicklin D.; Cohen T.; Levi B.-Z.; Witte L.; Lemischka I.R.; Neufeld G.
Department of Biology, Israel Institute of Technology, Haifa 32000 Israel
J. BIOL. CHEM. (USA) , 1994, 269/17 (12456-12461)
CODEN: JBCHA ISSN: 0021-9258
LANGUAGES: English SUMMARY LANGUAGES: English

15/3/23 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

8910279 EMBASE No: 93214049
Flk-1 , an fit-related receptor tyrosine kinase is an early marker for **endothelial** cell precursors
Yamaguchi T.P.; Dumont D.J.; Conlon R.A.; Breitman M.L.; Rossant J.
Samuel Lunenfeld Research Instltute, Mount Sinai Hospital, Toronto, Ont. M5G 1X5 Canada
DEVELOPMENT (United Kingdom) , 1993, 118/2 (489-498)
CODEN: DEVPE ISSN: 0950-1991
LANGUAGES: English SUMMARY LANGUAGES: English

15/3/24 (Item 1 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

09056376 97313246
Flk-1 expression defines a population of early embryonic hematopoietic precursors.
Kabrun N; Buhring HJ; Choi K; Ullrich A; Risau W; Keller G
National Jewish Medical and Research Center, Denver, CO 80206, USA.
Development (ENGLAND) May 1997, 124 (10) p2039-48, ISSN 0950-1991 Journal Code: ECW
Contract/Grant No.: R01 HL48834A, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

15/3/25 (Item 2 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08978576 97236934
Vessel patterning in the embryo of the zebrafish: guidance by notochord.
Fouquet B; Weinstein BM; Serluca FC; Fishman MC
Cardiovascular Research Center, Massachusetts General Hospital, Charlestown 02129, USA.
Dev Biol (UNITED STATES) Mar 1 1997, 183 (1) p37-48, ISSN 0012-1606 Journal Code: E7T
Contract/Grant No.: RO1-HL49579, HL, NHLBI; T32-HL07208, HL, NHLBI
Languages: ENGLISH

Document type: JOURNAL ARTICLE

15/3/26 (Item 3 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08922353 97178973
The zebrafish gene cloche acts upstream of a **flk-1** homologue to regulate **endothelial** cell differentiation.
Liao W; Bisgrove BW; Sawyer H; Hug B; Bell B; Peters K; Grunwald DJ; Stainier DY
Department of Biochemistry and Biophysics, University of California, San Francisco 94143-0554, USA.
Development (ENGLAND) Jan 1997, 124 (2) p381-9, ISSN 0950-1991 Journal Code: ECW
Contract/Grant No.: HL54737, HL, NHLBI; HL55265, HL, NHLBI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

15/3/27 (Item 4 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08792354 96424522
Flk-1, a receptor for vascular **endothelial** growth factor (VEGF), is expressed by retinal **progenitor** cells.
Yang K; Cepko CL
Howard Hughes Medical Institute, Harvard Medical School, Boston, Massachusetts 02115, USA.
J Neurosci (UNITED STATES) Oct 1 1996, 16 (19) p6089-99, ISSN 0270-6474 Journal Code: JDF
Contract/Grant No.: R01EY09676, EY, NEI
Languages: ENGLISH
Document type: JOURNAL ARTICLE

15/3/28 (Item 5 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08517675 96100386
The angiogenic potentials of the cephalic mesoderm and the origin of brain and head blood vessels.
Couly G; Coltey P; Eichmann A; Le Douarin NM
Institut d'Embryologie Cellulaire et Moleculaire du CNRS et du College de France, UMR 9924, Nogent-sur-Marne, France.
Mech Dev (IRELAND) Sep 1995, 53 (1) p97-112, ISSN 0925-4773 Journal Code: AXF
Languages: ENGLISH
Document type: JOURNAL ARTICLE

15/3/29 (Item 6 from file: 154)
DIALOG(R)File 154:MEDLINE(R)

08343098 95319537
Role of the Flt-1 receptor tyrosine kinase in regulating the assembly of vascular **endothelium**.
Fong GH; Rossant J; Gertsenstein M; Breitman ML
Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Ontario, Canada.
Nature (ENGLAND) Jul 6 1995, 376 (6535) p66-70, ISSN 0028-0836

Journal Code: NSC
Languages: ENGLISH
Document type: JOURNAL ARTICLE

7/7/24 (Item 24 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10871247 BIOSIS Number: 97071247
Expression of **tie-2**, a member of a novel family of receptor tyrosine kinases, in the **endothelial** cell lineage
Schnuerch H; Risau W
Max-Planck-Inst. Psychiatrie, Abt. Neurochem., Am Klopferspitz 18a, D-80333 Martinsried, GER
Development (Cambridge) 119 (3). 1993. 957-968.
Full Journal Title: Development (Cambridge)
ISSN: 0950-1991
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 004 Ref. 038758
We are interested in the molecular mechanisms that are involved in the development of the vascular system. In order to respond to morphogenetic and mitogenic signals, **endothelial** cells must express appropriate receptors. To characterize **endothelial** cell-specific receptors, we have concentrated on receptor tyrosine kinases, because several lines of evidence suggested the importance of controlled phosphotyrosine levels in **endothelial** cells. A strategy based on PCR amplification using degenerate oligonucleotides and mouse brain capillaries as mRNA source, led to the identification of a novel receptor tyrosine kinase, which we designated **tie-2**. In situ hybridization using a **tie-2** -specific probe revealed an interesting spatial and temporal expression pattern. The gene was expressed specifically in the **endothelial** lineage. **tie-2** transcripts were present in **endothelial** cell **precursors** (angioblasts) and also in **endothelial** cells of sprouting blood vessels throughout development and in all organs and tissues so far examined. **tie-2** was downregulated in the adult. Because of the unusual combination of immunoglobulin, EGF-like and fibronectin type III domains in the extracellular portion of **tie-2** which is shared by TEK and tie, these molecules may be considered members of a new family of receptor tyrosine kinases. Signal transduction via this new class of tyrosine kinases could lead to a better understanding of the molecular mechanisms of blood vessel formation.

7/7/27 (Item 27 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10401812 BIOSIS Number: 96001812
HIGH AFFINITY VEGF BINDING AND DEVELOPMENTAL EXPRESSION SUGGEST **FLK-1** AS A MAJOR REGULATOR OF VASCULOGENESIS AND ANGIOGENESIS
MILLAUER B; WIZIGMANN-VOOS S; SCHNURCH H; MARTINEZ R; MOLLER N P H; RISAU W; ULLRICH A
DEP. MOLECULAR BIOL., MAX PLANCK INSTITUTE BIOCHEMISTRY, AN KLOPFERSPITZ 18A, 8033 MARTINSRIED, GERMANY.
CELL 72 (6). 1993. 835-846. CODEN: CELLB
Full Journal Title: Cell
Language: ENGLISH
Examination of **flk-1** receptor tyrosine kinase mRNA expression by in situ hybridization analysis revealed specific association with **endothelial** cells at all stages of mouse development, including the blood islands in the yolk sac of day 8.5-10.5 embryos, in which the early

progenitors of this lineage originate. **flk-1** transcripts were abundant in proliferating **endothelial** cells of vascular sprouts and branching vessels of embryonic and early postnatal brain, but were drastically reduced in adult brain, where proliferation has ceased. Identification of the angiogenic mitogen, vascular **endothelial** growth factor (VEGF), as the high affinity ligand of **Flk-1** and correlation of the temporal and spatial expression pattern of **Flk-1** and VEGF suggest a major role of this ligand-receptor signaling system in vasculogenesis and angiogenesis.

7/7/31 (Item 4 from file: 72)
DIALOG(R)File 72:EMBASE

8910279 EMBASE No: 93214049
Flk-1 , an fit-related receptor tyrosine kinase is an early marker for **endothelial** cell **precursors**
Yamaguchi T.P.; Dumont D.J.; Conlon R.A.; Breitman M.L.; Rossant J.
Samuel Lunenfeld Research Instltute, Mount Sinai Hospital, Toronto, Ont. M5G 1X5 Canada
DEVELOPMENT (United Kingdom) , 1993, 118/2 (489-498)
CODEN: DEVPE ISSN: 0950-1991
LANGUAGES: English SUMMARY LANGUAGES: English

Embryonic **stem** cells differentiate in vitro to **endothelial** cells through successive maturation steps

Vittet D; Prandini M-H; Berthier R; Schweitzer A; Martin-Sisteron H; Uzan G; Dejana E

INSERM U217, DBMS/HEM, CENG, 17 rue des Martyrs, 38054 Grenoble cedex 9, France

Blood 88 (9). 1996. 3424-3431.

Full Journal Title: Blood

ISSN: 0006-4971

Language: ENGLISH

Print Number: Biological Abstracts Vol. 102 Iss. 012 Ref. 172727

The mechanisms involved in the regulation of vasculogenesis still remain unclear in mammals. Totipotent embryonic **stem** (ES) cells may represent a suitable in vitro model to study molecular events involved in vascular development. In this study, we followed the expression kinetics of a relatively large set of **endothelial**-specific markers in ES-derived ambryoid bodies (EBs). Results of both reverse transcription-polymerase chain reaction and/or immunofluorescence analysis show that a spontaneous **endothelial** differentiation occurs during EBs development. ES-derived **endothelial** cells express a full range of cell lineage-specific markers: platelet **endothelial** cell adhesion molecule (PECAM), **Flk-1**, tie-1, **tie-2**, vascular **endothelial** (VE) cadherin, MECA-32, and MEC14.7, Analysis of the kinetics of **endothelial** marker expression allows the distinction of successive maturation steps. **Flk-1** was the first to be detected; its mRNA is apparent from day 3 of differentiation. PECAM and **tie-2** mRNAs were found to be expressed only from day 4, whereas VE-cadherin and tie-1 mRNAs cannot be detected before day 5. Immunofluorescence stainings of EBs with antibodies directed against **Flk-1** , PECAM, VE-cadherin, MECA-32, and MEC-14.7 confirmed that the expression of these antigens occurs at different steps of **endothelial** cell differentiation. The addition of an angiogenic growth factor mixture including erythropoietin, interleukin-6, fibroblast growth factor 2, and vascular **endothelial** growth factor in the EB culture medium significantly increased the development of primitive vascular-like structures within EBs. These results indicate that this in vitro system contains a large part of the **endothelial** cell differentiation program and constitutes a suitable model to study the molecular mechanisms involved in vasculogenesis.

3/7/3 (Item 1 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

127106976 CA: 127(8)106976d JOURNAL

Proto-oncogene of int-3, a mouse Notch homolog, is expressed in endothelial cells during early embryogenesis

AUTHOR(S): Shirayoshi, Yasuaki; Yuasa, Yoshihiro; Suzuki, Takashi; Sugaya, Kimihiko; Kawase, Eihachiro; Ikemura, Toshimichi; Nakatsuji, Norio

LOCATION: Mammalian Dev. Lab., National Inst. Genetics, Mishima, Japan, 411

JOURNAL: Genes Cells DATE: 1997 VOLUME: 2 NUMBER: 3 PAGES: 213-224

CODEN: GECEFL ISSN: 1356-9597 LANGUAGE: English PUBLISHER: Blackwell

SECTION:

CA213003 Mammalian Biochemistry

CA203XXX Biochemical Genetics

CA206XXX General Biochemistry

IDENTIFIERS: mouse gene Notch 4 protein sequence, int 3 Notch4 proto oncogene expression, endothelium cell differentiation Notch4 gene expression, vasculogenesis angiogenesis Notch 4 int 3

DESCRIPTORS:

Heart... Yolk sac...

blood vessel endothelium, Notch-4 expression in; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed

Notch-4) in endothelial cells during early embryogenesis
Embryo(animal)...
branchial arch, blood vessel endothelium, Notch-4 expression in; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Vascular endothelium...
capillary, plexus, expression in; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Aorta...
dorsal, endothelium, Notch-4 expression in; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Capillary vessel(blood)...
endothelium, plexus, expression in; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Genes(animal)...
flk-1; co-expression with gene Notch-4 in blood vessel endothelial cells and up-regulation of expression during endothelial cell differentiation from embryonic stem cells
Genes(animal)...
flt-1; encoding receptor tyrosine kinase, up-regulation of expression during endothelial cell differentiation from embryonic stem cells
Proteins(specific proteins and subclasses)...
gene Notch-4; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Protein motifs...
Notch family, presence in Notch-4 protein; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Genes(animal)...
Notch-4; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Cell differentiation... Stem cell(embryonic)...
of endothelial cells from embryonic stem cells, up-regulation of Notch-4/int-3 expression during
Embryo(animal)... Mouse... Protein sequences... Vascular endothelium...
sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis
Genes(animal)...
tie-1; encoding receptor tyrosine kinase, up-regulation of expression during endothelial cell differentiation from embryonic stem cells
Genes(animal)...
tie-2; encoding receptor tyrosine kinase, up-regulation of expression during endothelial cell differentiation from embryonic stem cells
CAS REGISTRY NUMBERS:
192269-16-2 amino acid sequence of; sequence and expression of mouse Notch homolog proto-oncogene int-3 (renamed Notch-4) in endothelial cells during early embryogenesis

7/7/24 (Item 24 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10871247 BIOSIS Number: 97071247
Expression of **tie-2**, a member of a novel family of receptor tyrosine kinases, in the **endothelial** cell lineage
Schnuerch H; Risau W
Max-Planck-Inst. Psychiatrie, Abt. Neurochem., Am Klopferspitz 18a, D-80333 Martinsried, GER
Development (Cambridge) 119 (3). 1993. 957-968.
Full Journal Title: Development (Cambridge)
ISSN: 0950-1991
Language: ENGLISH
Print Number: Biological Abstracts Vol. 097 Iss. 004 Ref. 038758
We are interested in the molecular mechanisms that are involved in the development of the vascular system. In order to respond to morphogenetic and mitogenic signals, **endothelial** cells must express appropriate receptors. To characterize **endothelial** cell-specific receptors, we have concentrated on receptor tyrosine kinases, because several lines of evidence suggested the importance of controlled phosphotyrosine levels in **endothelial** cells. A strategy based on PCR amplification using degenerate oligonucleotides and mouse brain capillaries as mRNA source, led to the identification of a novel receptor tyrosine kinase, which we designated **tie-2**. In situ hybridization using a **tie-2** -specific probe revealed an interesting spatial and temporal expression pattern. The gene was expressed specifically in the **endothelial** lineage. **tie-2** transcripts were present in **endothelial** cell **precursors** (angioblasts) and also in **endothelial** cells of sprouting blood vessels throughout development and in all organs and tissues so far examined. **tie-2** was downregulated in the adult. Because of the unusual combination of immunoglobulin, EGF-like and fibronectin type III domains in the extracellular portion of **tie-2** which is shared by TEK and tie, these molecules may be considered members of a new family of receptor tyrosine kinases. Signal transduction via this new class of tyrosine kinases could lead to a better understanding of the molecular mechanisms of blood vessel formation.

7/7/27 (Item 27 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

10401812 BIOSIS Number: 96001812
HIGH AFFINITY VEGF BINDING AND DEVELOPMENTAL EXPRESSION SUGGEST **FLK-1** AS A MAJOR REGULATOR OF VASCULOGENESIS AND ANGIOGENESIS
MILLAUER B; WIZIGMANN-VOOS S; SCHNURCH H; MARTINEZ R; MOLLER N P H; RISAU W; ULLRICH A
DEP. MOLECULAR BIOL., MAX PLANCK INSTITUTE BIOCHEMISTRY, AN KLOPFERSPITZ 18A, 8033 MARTINSRIED, GERMANY.
CELL 72 (6). 1993. 835-846. CODEN: CELLB
Full Journal Title: Cell
Language: ENGLISH
Examination of **flk-1** receptor tyrosine kinase mRNA expression by in situ hybridization analysis revealed specific association with **endothelial** cells at all stages of mouse development, including the blood islands in the yolk sac of day 8.5-10.5 embryos, in which the early

progenitors of this lineage originate. **flk-1** transcripts were abundant in proliferating **endothelial** cells of vascular sprouts and branching vessels of embryonic and early postnatal brain, but were drastically reduced in adult brain, where proliferation has ceased. Identification of the angiogenic mitogen, vascular **endothelial** growth factor (VEGF), as the high affinity ligand of **Flk-1** and correlation of the temporal and spatial expression pattern of **Flk-1** and VEGF suggest a major role of this ligand-receptor signaling system in vasculogenesis and angiogenesis.

7/7/17 (Item 17 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)

12027737 BIOSIS Number: 98627737

CD34+ **endothelial** cell lines derived from murine yolk sac induce the proliferation and differentiation of yolk sac CD34+ hematopoietic **progenitors**

Fennie C; Cheng J; Dowbenko D; Young P; Lasky L A

Dep. Molecular Oncol., Genentech Inc., 460 Pt. San Bruno Blvd., South San Francisco, CA 94080, USA

Blood 86 (12). 1995. 4454-4467.

Full Journal Title: Blood

ISSN: 0006-4971

Language: ENGLISH

Print Number: Biological Abstracts Vol. 101 Iss. 004 Ref. 043482

Embryonic hematopoiesis is initiated in part in the blood islands of the yolk sac. Previous confocal microscopic analysis has shown that the CD34 antigen, a mucin-like cell surface glycoprotein that is expressed by hematopoietic **progenitors** and all **endothelial** cells of the adult and embryo, is also found on a subset of luminal hematopoietic-like cells in the yolk sac blood islands as well as on the vascular **endothelium** lining these early hematopoietic locations. We show here that, as in all other hematopoietic sites thus far examined, immunoaffinity-purified CD34+ nonadherent cells from murine yolk sacs contain the vast majority of erythroid and myeloid **progenitor** cell colony forming activity. To examine the developmental interactions between these CD34+ hematopoietic **progenitor** cells of the yolk sac and the CD34+ yolk sac **endothelium**, we have immunoaffinity-purified adherent **endothelial** cells from day 10.5 yolk sacs using CD34 antiserum and produced cell lines by transformation with a retrovirus expressing the polyoma middle T antigen. Analysis of these cell lines for CD34, von Willebrand's factor, **FLK 1** and FLT 1 expression, and capillary growth in Matrigel indicates that they appear to be **endothelial** cells, consistent with their original phenotype in vivo. Coculture of yolk sac CD34+ hematopoietic cells on these **endothelial** cell lines results in up to a 60-fold increase in total hematopoietic cell number after approximately 8 days. Analysis of these expanded hematopoietic cells showed that the majority were of the monocyte/macrophage lineage. In addition, examination of the cultures showed the rapid formation of numerous cobblestone areas, a previously described morphologic entity thought to be representative of early pluripotential **stem** cells. Scrutiny of the ability of these **endothelial** cell lines to expand committed **progenitor** cells showed up to a sixfold increase in erythroid and myeloid colony-forming cells after 3 to 6 days in culture, consistent with the notion that these embryonic **endothelial** cells mediate the expansion of these **precursor** cells Polymerase chain reaction analyses showed that most of the cell lines produce FLK-2/FLT-3 ligand, **stem** cell factor, macrophage colony-stimulating factor, leukemia-inhibitory factor, and interleukin-6 (IL-6), whereas there is a generally low or not measurable production of granulocyte colony-stimulating factor, granulocyte-macrophage colony-stimulating factor, IL-1, IL-3, transforming growth factor beta-1, erythropoietin, or thrombopoietin. The output of mature hematopoietic cells from these cocultures can be modified to include an erythroid population by the addition of exogenous erythropoietin. These data suggest that **endothelial** cell lines derived from the yolk sac provide an appropriate hematopoietic environment for the expansion and differentiation of yolk sac **progenitor** cells into at least the